SERVICE MANUAL

(without price)

ELECTRONIC CASH REGISTER

SE-S10/PCR-T280/ PCR-T280L/PCR-T290L

(EX-276)

JULY. 2009

INDEX

CASIO®

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CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

1. SPECIFICATIONS

1-1. Environmental specifications

Operating temperature	0 °C ~ 40 °C
Operating humidity	10 % ~ 90 %
Storage temperature	-25 °C ~ 65 °C
Storage humidity	10 % ~ 95 %
Vibration strength	1.5 G (The machine must be in the carton box)

1-2. Electrical specifications

Power consumption			120 V	220 V	230 V	240 V
	In operation	Max.	0.2 A	0.13 A	0.13 A	0.13 A
	Mode SW OFF	Max.	0.014 A	0.011 A	0.011 A	0.011 A
Memory protection	Back-up battery		Mangan Battery (UM-3, or R6P(SUM-3)) × 2 pcs			
	Back-up period		1 year (25 °C)			
	Battery life		Replace the battery every 1 years.			
Clock & Calendar	Accuracy		Within ± 30 sec. per month (25 °C)			
	Auto calendar		Effective until 2099 A.D.			

1-3. Main components

CPU	Name	UPD70F3737GC-UEU-AX
	Number of control bit	32 bit
Printer	Name	LTP225B-C192-E
	Method	Thermal line dot printing
	Number of dots/line	192 dot/line
	Paper roll	58 mm × 80 mm Ø (Max.)

1-4. Drawer List

Type	Drawer Name	Specification
S	DL-1334	D-21L2C-D54RM-4
S	DL-1843	D-21L2C-D53RM-4
M	DL-2811	D-25L2C-A84RM-4
M	DL-2812	D-25L2C-B84RM-4

1-5. Option List

Device Name	Model	Note
Water cover	WT-92	

2. MACHINE INITIALIZATION

2-1. Initializing Procedures

1. Turn the mode switch to [OFF].
2. Unplug the power cord.
3. Remove the backup memory battery, and leave it as it is for approximately 1 minute.
4. Connect the power cord.
5. Turn the mode switch to [PGM].

2-2. Replacing the Back-up Memory Battery

<Cautions for Replacing the Battery>

Replacing with an incorrect type of the battery may cause an explosion. Be sure to replace with the correct type of battery.

Dispose of used batteries according to the instruction.

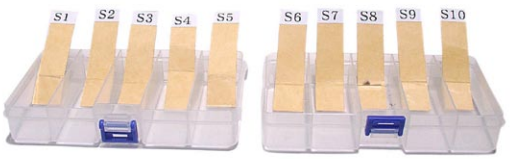
Please replace the Backup Memory Battery once a year.

1. Remove the printer cover.
2. Open the battery compartment cover.
3. Load 2 new UM-3, or R6P (SUM-3) type batteries into the compartment. Be sure that the plus (+) and minus (–) ends of each battery are facing in the directions indicated by the illustrations inside the battery compartment
4. Replace the memory protection battery compartment cover back into place.

Note: To prevent to lose all of your settings and sales data, we recommend you to install

3. DISASSEMBLY

Make sure to use the correct screws when assembling since there are several kinds of them. It is recommended to sort them as shown in the right illustration when disassembling.



See the flowchart below for the order of disassembling the major components.

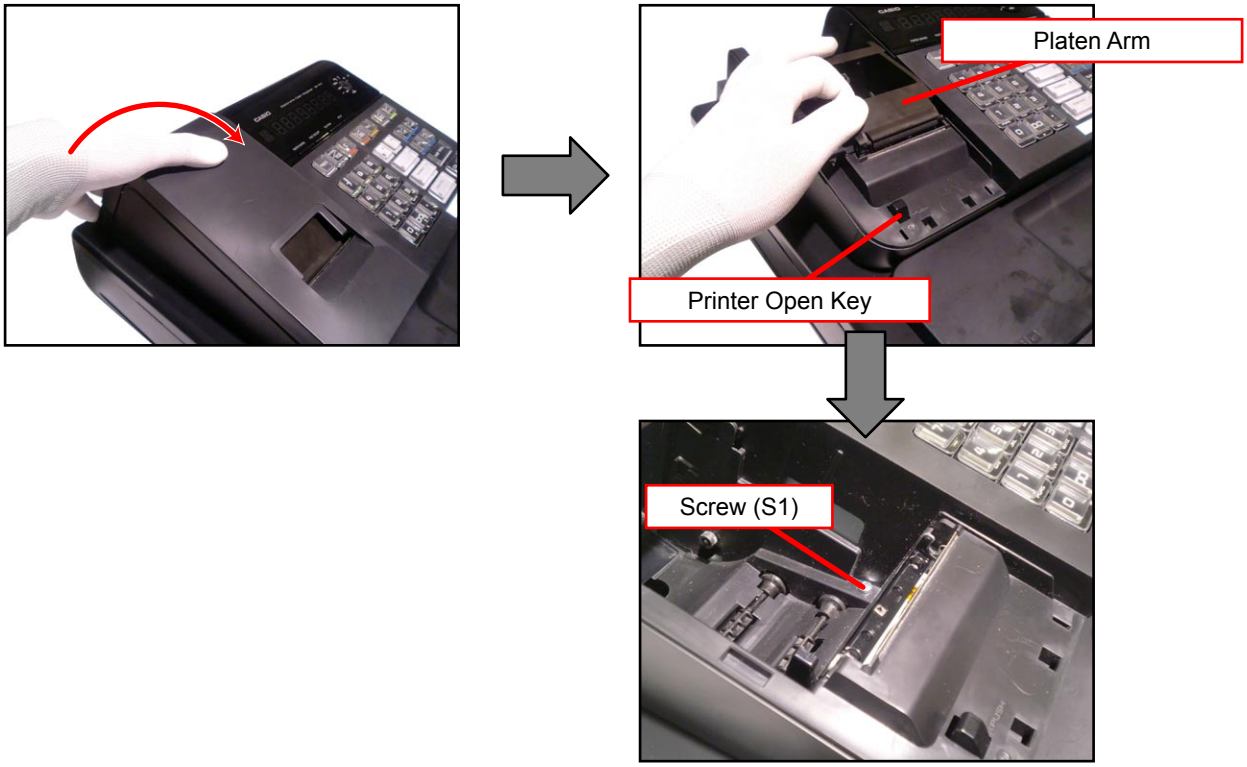
- A.UPPER CASE
  - B.MODE-KEY-SW-ASSY
  - C.PCB-ASSY (E276-1 PCB, E276-PR PCB)
    - F.KEY-BOARD-ASSY
  - D.DISPLAY-ASSY
  - E.PRINTER UNIT

A. UPPER CASE

A-1. Remove the Printer Cover.

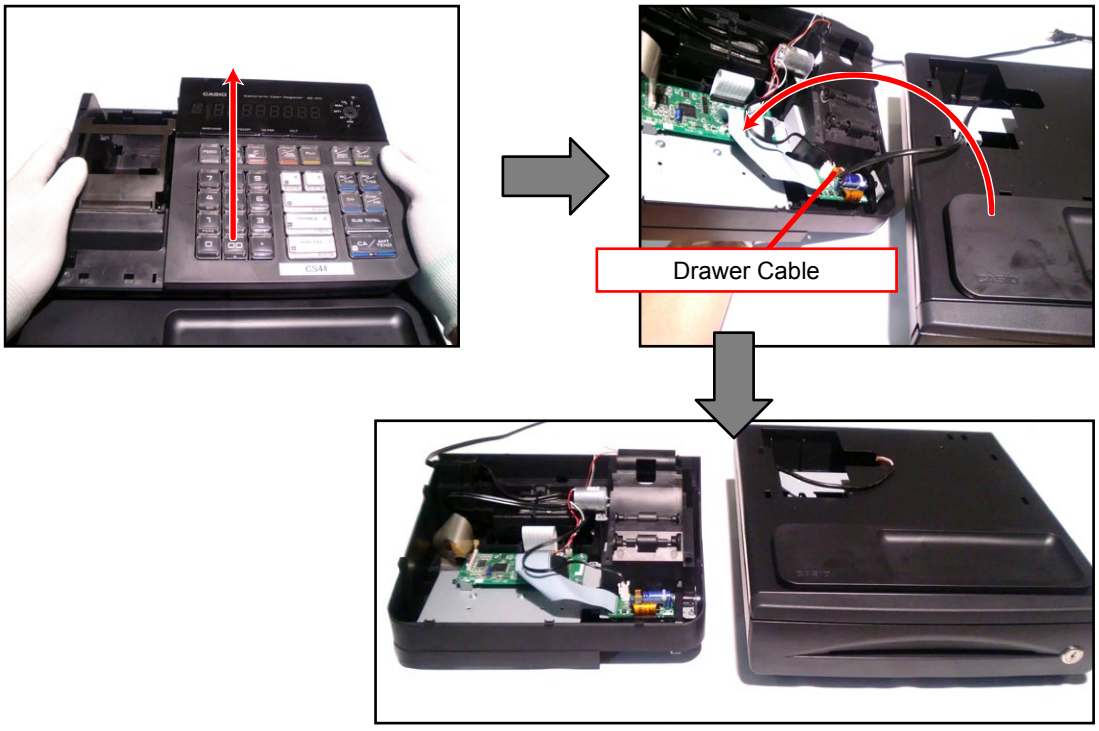
A-2. Press the Printer Open Key and open the Platen Arm.

A-3. Undo one screw (S1).



A-4. Remove the Upper Case.

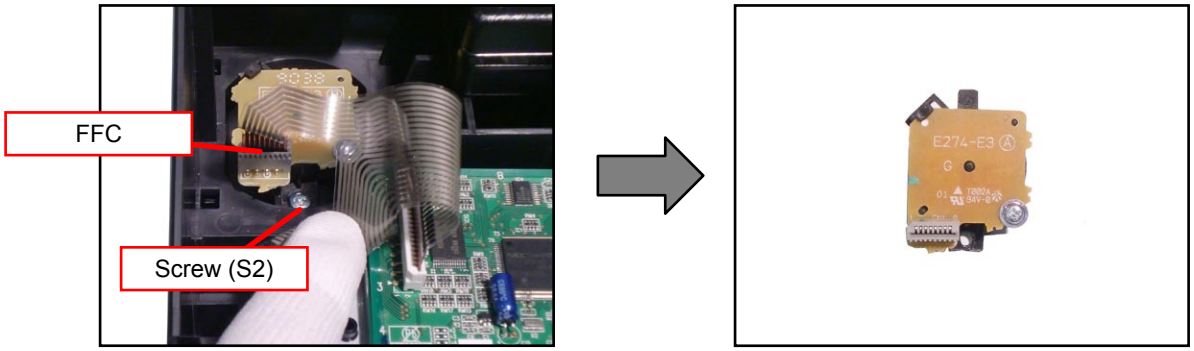
A-5. Remove the Drawer Cable.



B. MODE-KEY-SW-ASSY

B-1. Remove the FPC.

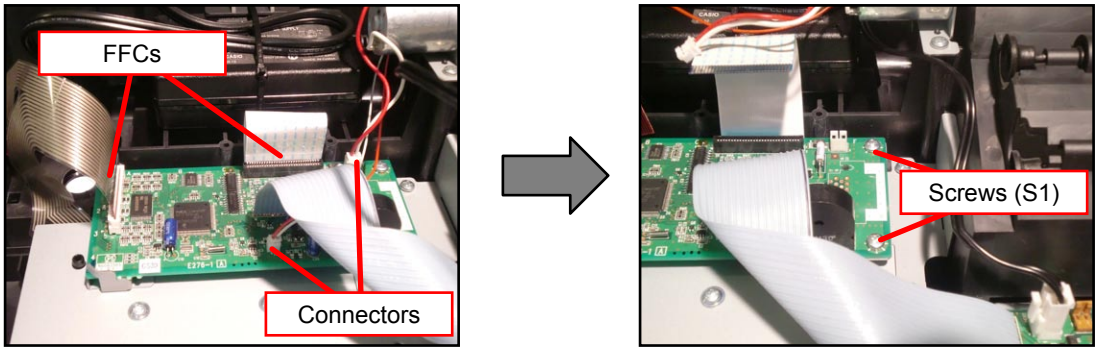
B-2. Undo one screw (S2) and remove the Mode-Key-SW-ASSY.



C. PCB-ASSY (E276-1 and E276-PR PCBs)

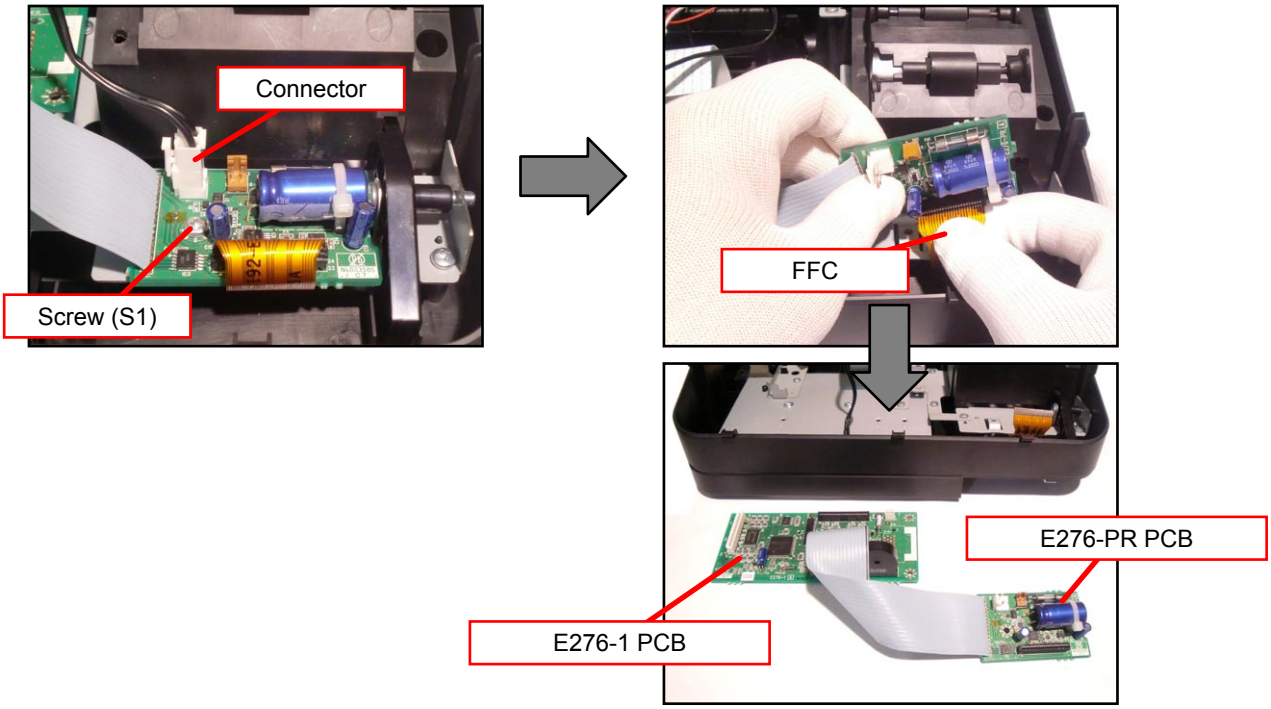
C-1. Remove two FFCs and two connectors.

C-2. Undo two screws (S1) and remove the E276-1 PCB.



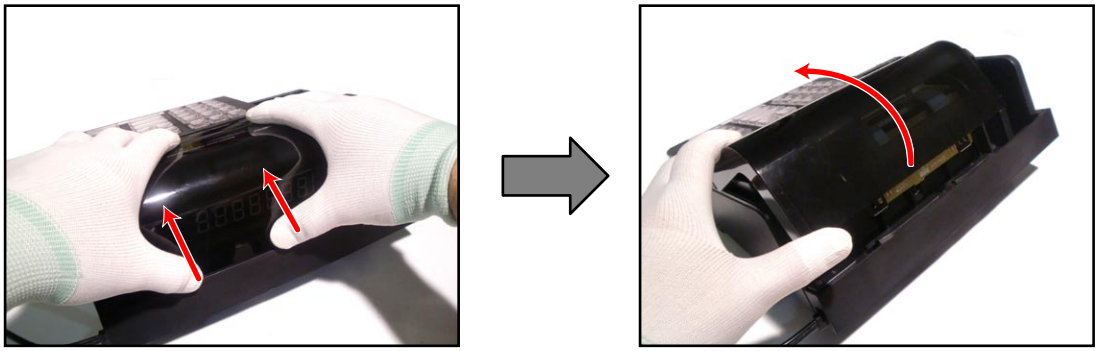
C-3. Remove one connector (S1) and undo one screw (S1).

C-4. Remove the FFC and remove the E276-PR PCB.

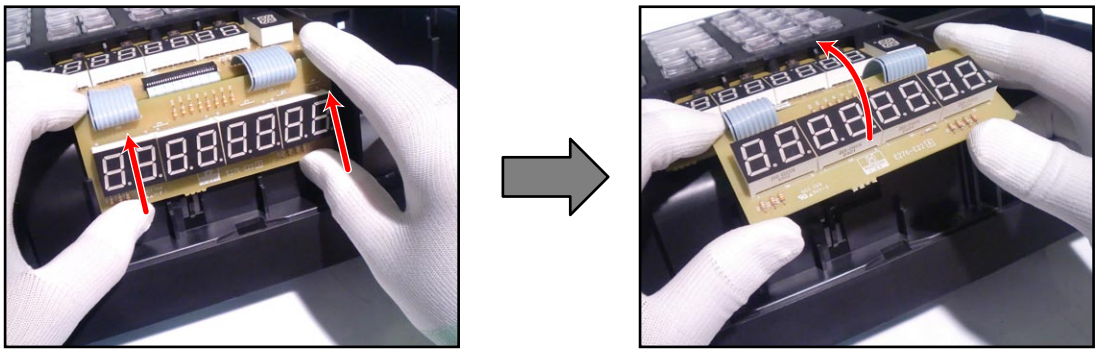


D. DISPLAY-ASSY

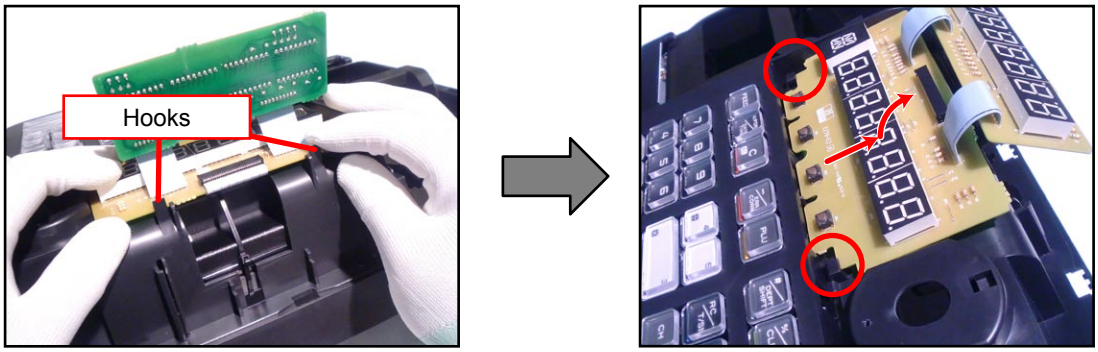
D-1. Remove the Display Cover.



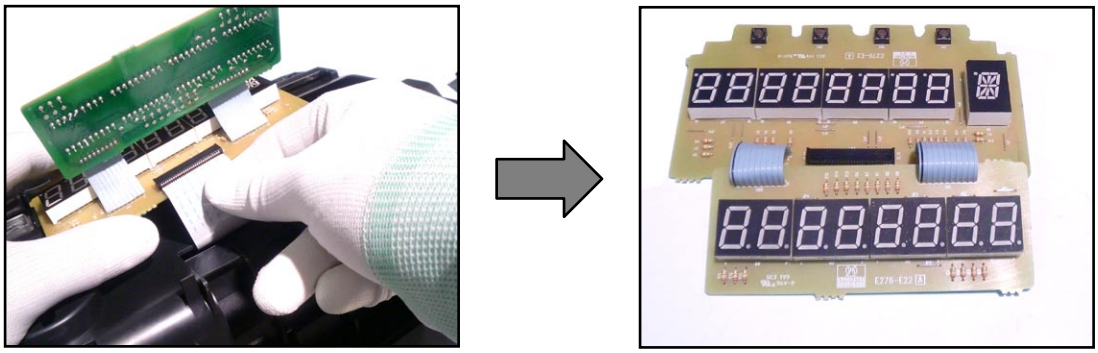
D-2. Remove the Back Segment LCD.



D-3. Remove two hooks and, then, the Front Segment LCD.

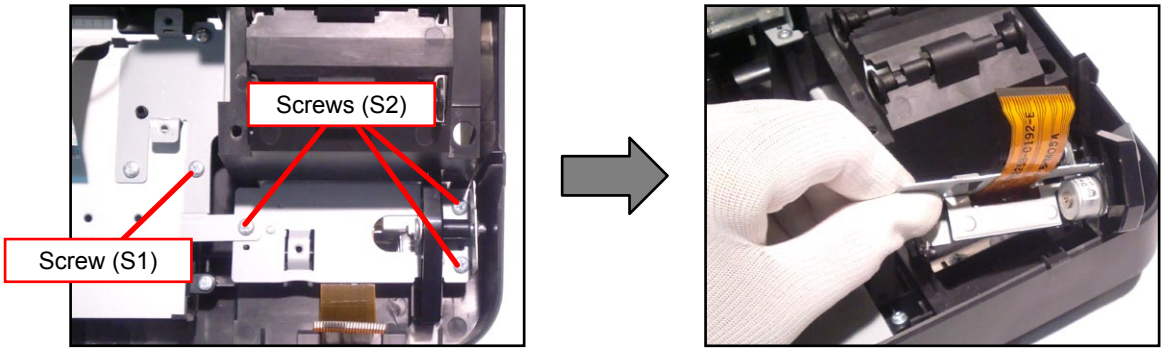


C-4. Remove the FFC and remove the E276-PR PCB.



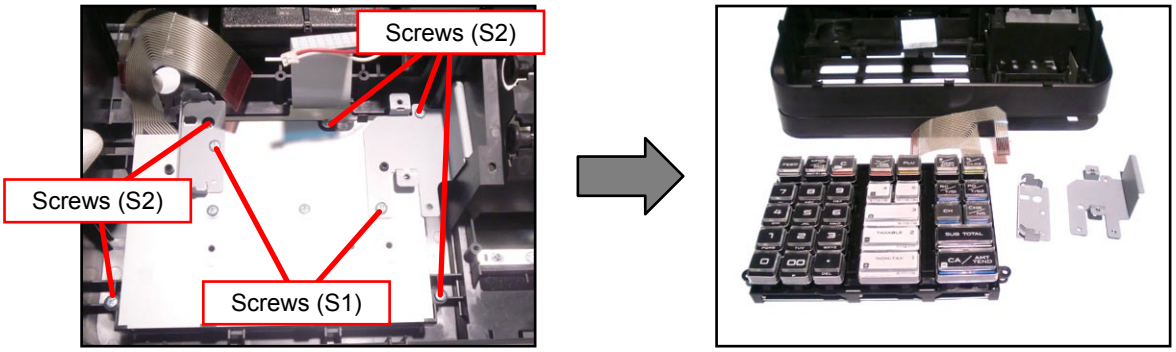
E. PRINTER UNIT

E-1. Undo four screws (S1, S2) and remove the Printer Unit.

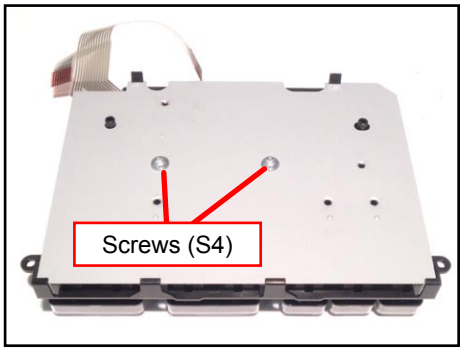


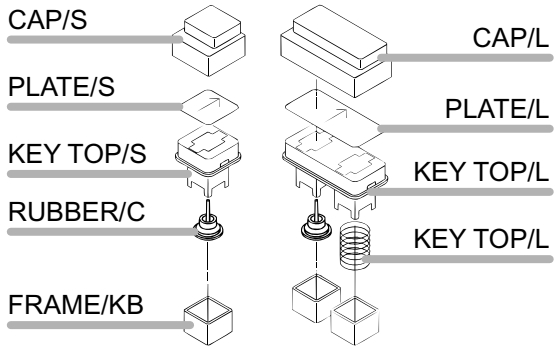
F. KEY-BOARD-ASSY

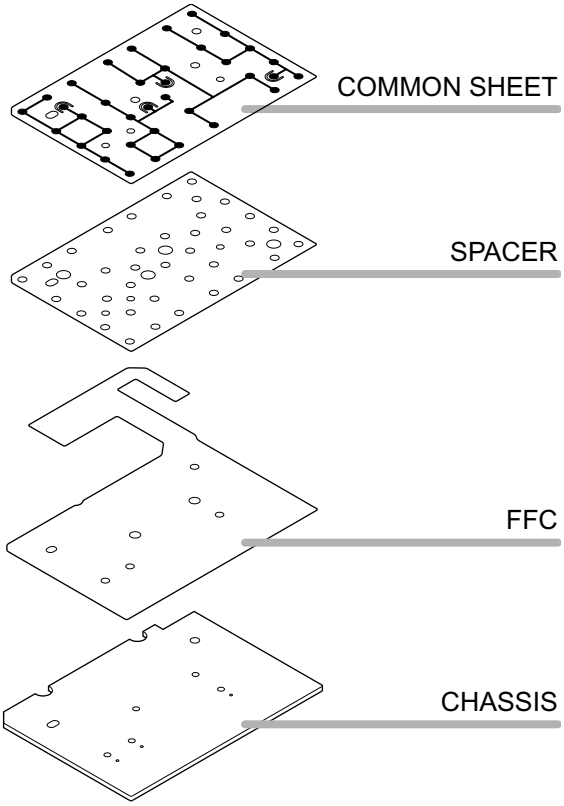
F-1. Undo seven screws (S1, S2) and remove the Key-Board-ASSY.



F-2. Undo two screws (S4) and disassemble the Key-Board-ASSY.







4. DIAGNOSTIC PROGRAM

4-1. Launching the Diagnostic Program

[Notes]
If a receipt has been issued in other modes, the Diagnostic Program will not launch.
When this happens, exit and restart the Diagnostic Program. To exit the Diagnostic Program, see "3-2. Exiting the Diagnostic Program".

1. Turn the Mode Switch to [PGM].
2. Press [9] [9] [9] [9] [0] [0] [0] [0] [SUBTOTAL].
3. The Diagnostic Program starts.
4. The version information of the Diagnostic Program is automatically printed.

```
Diag Ver: 0427     CSDIAG
Apr 27 2009     13:40
```

5. Once the program starts, the status is displayed.
   While the Diagnostic Program is running and a test is not being performed, the status is always indicated. For more about the status, see "[1] Status Display".

4-2. Exiting the Diagnostic Program

1. Turn the Mode Switch to [OFF].
2. Unplug the Power Cord.
3. Remove the Backup Memory Battery, and leave it as it is for approximately 1 minute.

4-3. Caution

- To forcibly terminate a test, press [C (Clear)] or turn the Mode Switch to [OFF].
  If a test is terminated, the device prints out the following:
  For the number of test to perform, you may select "once" or "infinite loop".

```
ESC
```

- If "0" is entered as the number of times to perform the test, the test will be performed only once.
  If any value between "1" and "9" is entered, the test is repeated infinitely. To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].
- If a test result fails, the test is terminated regardless of the number of times previously set to perform.
- If the Mode Switch is turned to [OFF] while the Diagnostic Program is running, the light on the 7-Segment turns off. Any command entered during this time is not accepted.
- The winder motor rotates during printing. (No R/J switching function available.)
- If a command of 8 digits or more is entered, the values entered initially are canceled.
  [2] [5] [5] [2] [5] [5] [1] [1] [3] [0] [SUBTOTAL].
  If the above command is entered, the values indicated with double-lined boxes will be displayed in the 7-Segment.
  The first two digits, "2" and "5", will be canceled and, therefore, will not be displayed.
- When a command starts with "0", "0" will not be printed.
- When printed characters are hidden behind the printer cover, press [FEED] to advance the printer paper.

4-4. Check Item

This diagnostic program tests the following items.

No.	Item	Command	Page
1	STATUS DISPLAY	—	
2	BATCH TEST	1	
3	RAM WRITE/READ TEST	n011	
4	RAM READ ONLY TEST	n111	
5	FLASH ROM CLEAR TEST	n212	
6	FLASH ROM WRITE/READ TEST	n012	
7	FLASH ROM CLEAR & WRITE/READ TEST	n312	
8	INTERNAL ROM CHECK SUM TEST	n512	
9	RAC CLEAR TEST	n214	
10	RAC WRITE/READ TEST	n014	
11	RAM READ ONLY TEST	n114	
12	RAC CLEAR & WRITE/READ TEST	n314	
13	7-SEGMENT DISPLAY TEST	221	
14	CHARACTER PRINT TEST	acn030	
15	GRAPHIC PATTERN PRINT TEST	P1P1P1P2P2P2n130	
16	DOT RATE PRINT TEST	pn330	
17	PRINT EVALUATION TEST	430	
18	DATE/TIME SETTING CHECK	070	
		DATE/TIME SETTING CHANGE	
19	DATE/TIME SETTING CHANGE	hhmmss0070	
		BUZZER TEST	
20	DRAWER OPEN TEST	n091	
21	BUZZER TEST	n092	
22	KEY TEST	94	

● About Batch Test

A Batch Test performs the following tests:

DISPLAY, ROM CHECK SUM, PRINT, DATE/TIME, BUZZER, DRAWER OPEN, ISSUE RECEIPT

● About Memory Test

The Memory Test is performed by each device.

<Memory Test Applicable for Each Device>

Test Item	External RAM	External FLASH ROM	RAC
WRITE/READ TEST	○	○	○
READ ONLY TEST	○	×	○
CLEAR TEST	×	○	○
CLEAR & WRITE/READ TEST	×	○	○

● Entering the Command

Follow the code below to enter a command.

[X][X][X][X][X][X][n][a][g][d]

[X] : Additional action [n] : Number of times to run [a] : Action

[g] : Group number [d] : Device number

To enter the command, press [SUBTOTAL].

[1] STATUS DISPLAY

[Function]

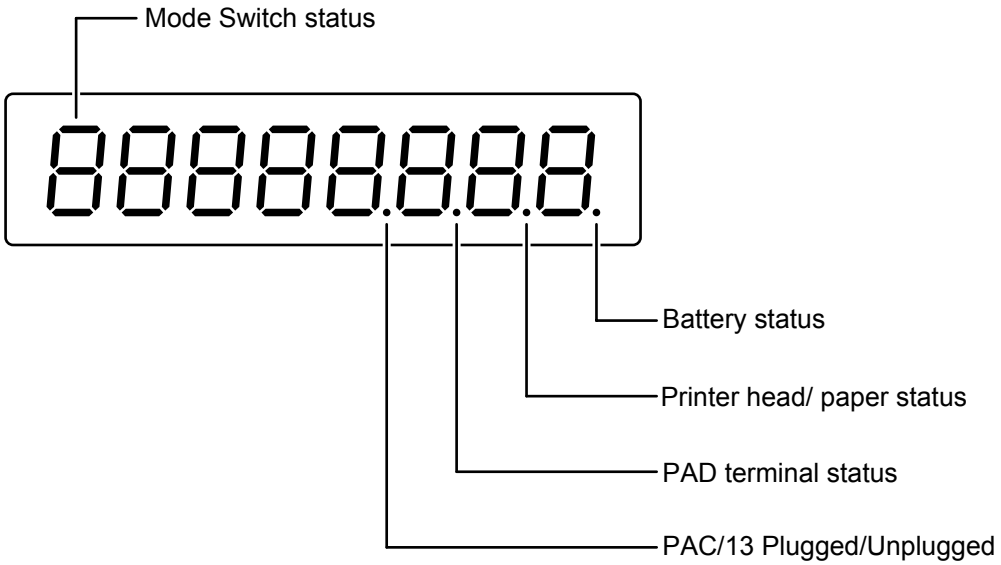
The device status is indicated with ON/OFF of the light on the Segment.

[Operation]

To check the mode, switch the Mode Switch.

To check the status of the paper feeder, press [FEED].

[[Segment Display]



Mode Switch Status	
Display	Status
1	Programming [PGM]
2	Refund [RF]
3	Register [REG]
4	Calculator [CAL]
5	Read [X]
6	Reset [Z]

Battery Level	
Display	Status
OFF	Battery level: Normal
ON	Battery level: Low or 0%

Printer Head / Paper Status	
Display	Status
OFF	Head is down/ paper remaining
ON	Head is up/ no paper remaining

PAD Terminal Status	
Display	Status
OFF	HIGH
ON	LOW

PAC/13 Plugged/Unplugged	
Display	Status
OFF	Unplugged
ON	Plugged

[2] BATCH TEST

[Function]

Sequentially performs DISPLAY TEST, CHECK SUM TEST, PRINT TEST, DATE/TIME SETTING, BUZZER TEST, and DRAWER OPEN TEST.

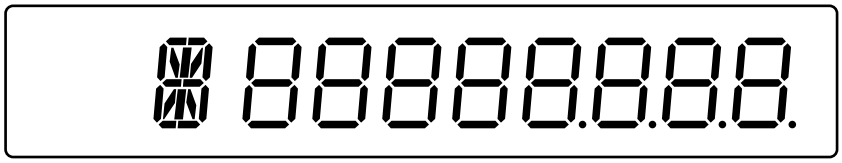
[Operation]

Command: 1 SUBTOTAL

The following tests are performed automatically.

(1) DISPLAY TEST: All of the segment turns ON.
(2) CHECK SUM TEST: Performs the CHECK SUM TEST for the internal ROM.
(3) PRINT TEST
(4) DATE/TIME SETTING: Configures the preset data.
Preset data: December 31, 2009, 23 hr. 59 min. 30 sec.
(5) BUZZER TEST: Sounds one-shot buzzer once.
The result of this test will not be printed or displayed.
(6) DRAWER OPEN TEST: Opens the drawer.
(7) ISSUE RECEIPT

[[Segment Display]



[PRINT]

```
BATCH                1
MASK CHK             OK
BBBBBBBBBBBBBBBBBBBBBBB
DATE                 09-12-31
TIME                 23-59 30
DRW                  OK
END                  1
```

← Test print

[3] RAM WRITE/READ TEST

[Notes]

Be sure to perform RAM READ ONLY TEST after this test.

[Function]

Writes data to RAM and reads the data. This test also checks if the device wrote and read the data correctly. To determine the data to write in this operation, seek the second, third, and forth digits from the last of the address and convert the sum to 1-byte data.

Data will not be written in the following areas.

- The memory used by HANDELR (static area)
- The memory used by DIAG (stack, static areas)
  The code is performed from FLASH ROM.

[Operation]

Command: | n | 0 | 1 | 1 | SUBTOTAL |

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             11
RAM WR          OK
END             11
```

[4] RAM READ ONLY TEST

[Notes]

Be sure to perform RAM WRITE/READ TEST before this test.

[Function]

Tests if the device reads RAM data correctly.

[Operation]

Command: n 1 1 1 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             111
RAM WR          OK
END             111
```

[5] FLASH ROM CLEAR TEST

[Notes]

Be sure to perform FLASH ROM WRITE/READ TEST after this test.

[Function]

Tests if the device clears FLASH ROM correctly.

[Operation]

Command: n 2 1 2 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             212
RAM WR          OK
END             212
```

[6] FLASH ROM WRITE/READ TEST

[Notes]

Be sure to perform FLASH ROM CLEAR TEST before this test.

[Function]

Writes data to FLASH ROM and reads the data. This test also checks if the device wrote and read the data correctly.

[Operation]

Command: n 0 1 2 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             12
RAM WR          OK
END             12
```

[7] FLASH ROM CLEAR & WRITE/READ TEST

[Function]

Clears FLASH ROM, writes data, and reads the data.
This test also checks if the device wrote and read the data correctly.

[Operation]

Command: n 3 1 2 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             312
RAM WR          OK
END             312
```

[8] INTERNAL ROM CHECK SUM TEST

[Function]

Performs the CHECK SUM TEST for the internal ROM.

[Operation]

Command: n 5 1 8 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM          518
RAM WR       OK
END          518
```

[9] RAC CLEAR TEST

[Notes]

Proper operation is not guaranteed for the internal data and main device of RAC used in this test.
Be sure to perform RAC WRITE/READ TEST after this test.

[Function]

Tests if the device clears RAC correctly.

[Operation]

Command: n 2 1 4 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM          214
RAM WR       OK
END          214
```

[10] RAC WRITE/READ TEST

[Notes]

Proper operation is not guaranteed for the internal data and main device of RAC used in this test.
Be sure to perform RAC CLEAR TEST before this test.

[Function]

Tests if RAC is connected correctly.
You may check for all areas by performing RAC CLEAR&WRITE/READ TEST.

[Operation]

Command: | n | 0 | 1 | 4 | SUBTOTAL |

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM          14
RAM WR       OK
END          14
```

[11] RAC READ ONLY TEST

[Notes]

Proper operation is not guaranteed for the internal data and main device of RAC used in this test.
Be sure to perform RAC WRITE/READ TEST before this test.

[Function]

Tests if the device reads RAC data correctly.

[Operation]

Command: | n | 1 | 1 | 4 | SUBTOTAL |

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             114
RAM WR          OK
END             114
```

[12] RAC CLEAR & WRITE/READ TEST

[Notes]

Proper operation is not guaranteed for the internal data and main device of RAC used in this test.

[Function]

Clears RAC, writes data, and reads the data.

This test also checks if the device wrote and read the data correctly.

[Operation]

Command: n 3 1 4 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
RAM             314
RAM WR          OK
END             314
```

[13] 7-SEGMENT DISPLAY TEST

[Function]

Tests if the front segment turns on correctly and if the back segment turns on and off correctly.

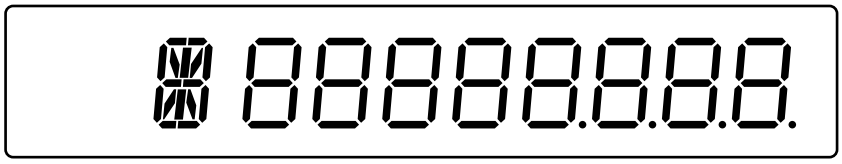
[Operation]

Command: 2 2 1 SUBTOTAL

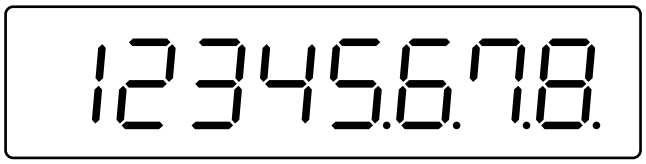
n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- Press any key to change the display on the back segment.
- To end this test, press [C(Clear)].
  The test result is printed out.

[Front Segment Display]



[Back Segment Display]



[PRINT]

RAM	221
RAM WR	OK
END	221

[14] CHARACTER PRINT TEST

[Function]

Tests if the internal printer prints characters correctly.

[Operation]

Command: | a | c | n | 0 | 3 | 0 | SUBTOTAL |

a: Print size	
0	Normal
1	Small

- If a command to specify the print size is omitted, the characters are printed in the normal size.

c: Characters to be printed	
0	Prints the character “B”
1	Prints all characters

- If you select “all characters”, all characters from 0x20 (blank space) to 0xFD are printed in the order of the character code.
- The character code without actual print-out is handled as a blank space.

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
PRT                    30
BBBBBBBBBBBBBBBBBBBBBB
END                    30
```

← The character “B” is printed.

If you select “all characters”, all characters are printed out as shown below.

```
 !"#$%&'()*+,-./01234567
89:;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[¥]^_`abcdefg
hijklmnopqrstuvwxyz{|}~
個
             。「」、・ヲァィゥェォャュョッ
ーアイウエオカキクケコサシスセソタチツテトナニヌ
ネノハヒフヘホマミムメモヤユヨラリルレロワン゛゜
```

[15] GRAPHIC PATTERN PRINT TEST

[Function]

Tests if the internal printer prints graphics correctly.

[Operation]

Command: P1 P1 P1 P2 P2 P2 n 1 3 0 SUBTOTAL

- Double-lined boxes show the command displayed on the 7-Segment.
  The first 2 commands will be canceled.

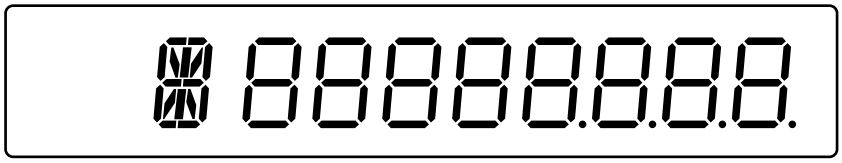
P1: Graphic pattern 1, P2:Graphic pattern 2
An 8-bit value converted to a decimal number

- “0” or “1” in the 8-bit value determines if dots are printed in the graphic pattern. “0” is for “no dot printing”, “1” is for “dot printing”.

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If you select “Infinite loop”, printing repeats unless it is forcibly terminated.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

[Segment Display]



[PRINT]

Repeats a pattern for a 28-dot line alternately in the order below.

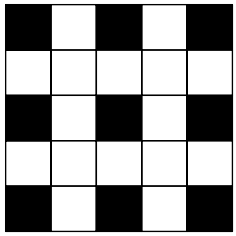
Graphic pattern 1	← Dot line 1
Graphic pattern 2	← Dot line 2
Graphic pattern 1	← Dot line 3
Graphic pattern 2	← Dot line 4
:	
Graphic pattern 2	← Dot line 28

1 line (28 dots)

<Example Print Out 1 >

0	8	5	0	0	0	1	1	3	0	SUBTOTAL

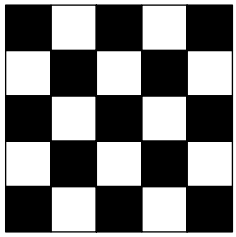
Graphic pattern 1: 085 (8 bit: 0101 0101)
Graphic pattern 2: 000 (8 bit: 0000 0000)
Number of time to run: Infinite loop



<Example Print Out 1 >

0	8	5	1	7	0	1	1	3	0	SUBTOTAL

Graphic pattern 1: 085 (8 bit: 0101 0101)
Graphic pattern 2: 170 (8 bit: 1010 1010)
Number of time to run: Infinite loop



<Example Print Out 1 >

2	5	5	2	5	5	1	1	3	0	SUBTOTAL

Graphic pattern 1: 255 (8 bit: 1111 1111)
Graphic pattern 2: 255 (8 bit: 1111 1111)
Number of time to run: Infinite loop

[16] DOT RATE PRINT TEST

[Function]

Tests if print out is performed at a dot rate specified in the internal printer correctly.

[Operation]

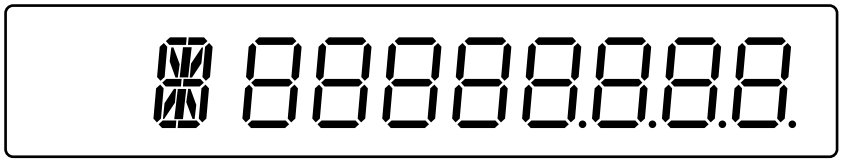
Command: p n 3 3 0 SUBTOTAL

p: Dot rate	
0	6-dot line
1	10-dot line
2	14-dot line

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If you select “Infinite loop”, printing repeats unless it is forcibly terminated.
- To forcibly terminate the infinite loop, press [C (Clear)] or turn the Mode Switch to [OFF].

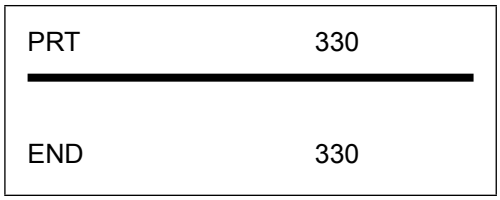
[Segment Display]



[PRINT]

<When a specified dot rate is 6-dot line>

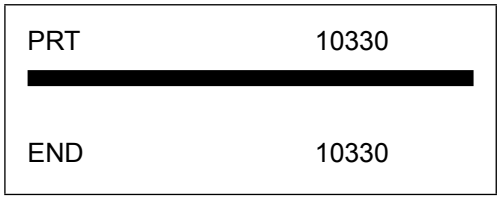
In one 28-dot line, all dots are printed in the first 6-dot line.



← All dots in the first 6-dot line
← No print out in the following 22-dot line

<When a specified dot rate is 10-dot line>

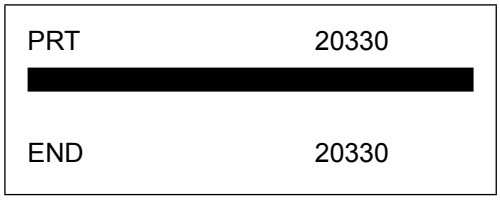
In one 28-dot line, all dots are printed in the first 10-dot line.



← All dots in the first 10-dot line
← No print out in the following 12-dot line

<When a specified dot rate is 14-dot line>

In one 28-dot line, all dots are printed in the first 14-dot line.



← All dots in the first 14-dot line
← No print out in the following 14-dot line

[17] PRINT EVALUATION TEST

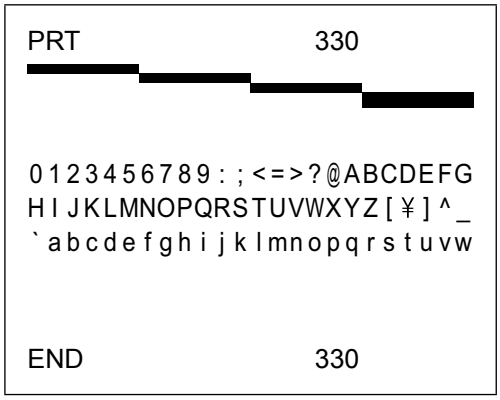
[Function]

Tests if the internal printer prints correctly according to the printing format.
The number of times to run cannot be specified in this test.The test is performed once.

[Operation]

Command: | 4 | 3 | 0 | SUBTOTAL |

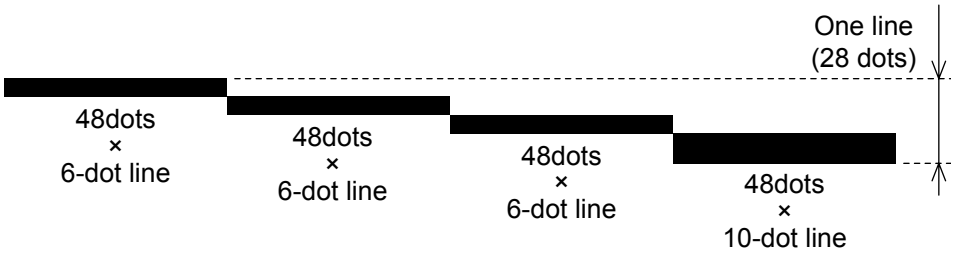
[PRINT]



← One line is printed in a stair-like shape.
← One-line feed

← Characters from 0x30 to 0x8F are printed in 3 lines

<Details of Stair-like Print Out>



[18] DATE/TIME SETTING CHECK

[Function]

Allows you to check the time (hour, minutes, seconds) and date (year, month, day) currently set. To change the settings, see DATE/TIME SETTING CHANGE. To terminate this step, press [C (Clear)] or turn the Mode Switch to [OFF].
Commands are printed out when the check ends.

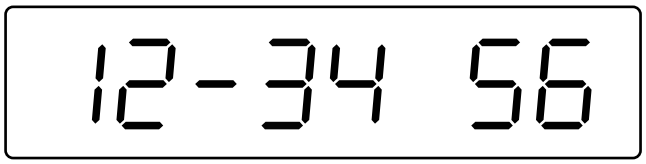
[Operation]

<Time> Command: 0 7 0 SUBTOTAL

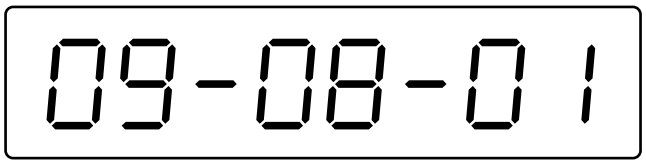
<Date> Command: 1 7 0 SUBTOTAL

[Segment]

<Time> Example: 12:34, 56 seconds



<Date> Example: August 1, 2009



[PRINT]

<Time>

DATE/TIME	70
ESC	
END	70

<Date>

DATE/TIME	170
ESC	
END	170

[19] DATE/TIME SETTING CHANGE

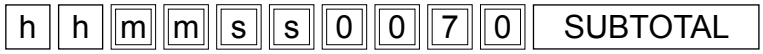
[Function]

Allows you to change the time (hour, minutes, seconds) and date (year, month, day) currently set. To terminate this step, press [C (Clear)] or turn the Mode Switch to [OFF].The new settings are printed out when the step is complete. To check the settings, see DATE/TIME SETTING CHECK.

[Operation]

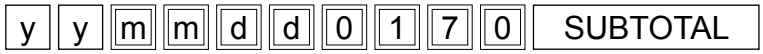
● Double-lined boxes show the command displayed on the 7-Segment.

<Time> Command:



hh	Hour	mm	Minutes	ss	Seconds

<Date> Command:



yy	Year	mm	Month	dd	Day

[PRINT]

<Time> Example: 12:34, 56 seconds

DATE/TIME	1234560070	← Command entered
TIME	12-34 30	← New setting for the time
END	1234560070	← Command entered

<Date> Example: August 1, 2009

DATE/TIME	908010170	← Command entered
ESC	09-08-01	← New setting for the time
END	908010170	← Command entered

[20] DRAWER OPEN TEST

[Function]

Tests whether drawers operate correctly.

[Operation]

Command: n 0 9 1 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If you select “infinite loop”, the drawer keeps opening until the step is forcibly terminated.
- To forcibly terminate the step, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
DRW                 91
DRW                 OK
END                 91
```

[21] BUZZER TEST

[Function]

Tests whether buzzer sounds correctly.

The result of this test is not printed out. An operator must be present during this step to determine the result.

[Operation]

Command: n 0 9 2 SUBTOTAL

n: Number of times to run	
0	Once
1 ~ 9	Infinite loop

- If a command to specify the number of times to run the test is omitted, the test is performed only once. If you select “once”, one-shot buzzer sounds.
- If you select “infinite loop”, 500-msec intermittent buzzer sounds repeatedly.
  To forcibly terminate the step, press [C (Clear)] or turn the Mode Switch to [OFF].

[PRINT]

```
BUZZ                92
END                 92
```

[22] KEY TEST

[Function]

Tests if keys are recognized correctly. Each key is assigned with a hard key code. This test checks if correct hard key cords are assigned.

All keys except for [FEED] and [C (Clear)] may be tested.

Pressing [C (Clear)] will terminate the test.

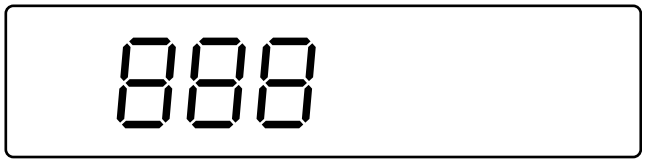
The result of this test is not printed out. An operator must be present during this step to determine the result.

[Operation]

Command: 9 4 SUBTOTAL

(1) Press any key to display a hard key code assigned to the key on the 7-Segment.

<Example of Display on 7-Segment>



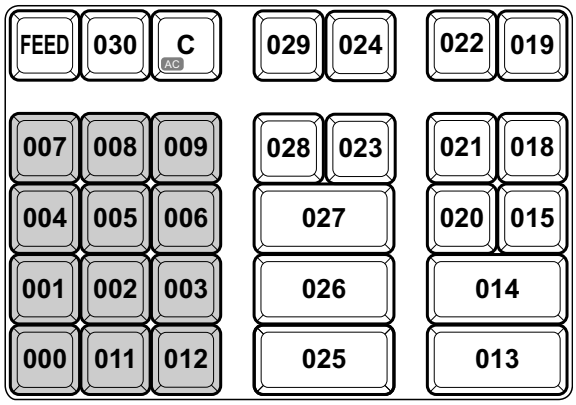
(2) To check if the number displayed on the 7-Segment is correct, refer to the Hard Key Code Chart.

(3) When all keys are tested, press [C (Clear)] to end the test.

Commands are printed out when the check ends.

<Hard Key Code Chart>

034	033	032	031



[PRINT OUT]

KEY	94
ESC	
END	94

5. TROUBLESHOOTING

5-1. If the following things happen

	Symptom/Problem	Most common causes	Solutions
1	**E01** appears on the display.	Changing modes without completing transaction.	Return mode switch to where it stops buzzing and press [= CA/AMT/TEND].
2	**E08** appears on the display.	Sign on operation is not performed.	Prior to starting registration of any other operation, press [1] ~ [8] and then [% CL#].
3	**E10** appears on the display.	Printer head (platen arm) is opened or no papaer roll.	Close the platen arm fi rmly or enter paper roll.
4	**E90** appears on the display.	Totals remain in the memory.	Issue the general control reset report, periodic reset report and PLU reset report.
5	**E81** appears on the display.	Electronic journal memory becomes/ is full.	Issue electronic journal reset report.
6	No date on receipt. Paper is not advancing enough.	Printer is programmed as a journal.	Program printer to print receipts.
7	Drawer opens up after ringing up only one time.	Department is programmed as a single item dept.	Program the dept. as a normal dept.
8	Not clearing totals at end of day after taking report.	Using X mode to take out reports.	Use Z mode to take out reports.
9	Programming is lost whenever register is unplugged or there is a power outage.	Bad or no batteries.	Put in new batteries.
10	Register is inoperative. Can't get money out of drawer.	No power.	Pull lever underneath register at rear.

5-2. In case of power failure

If the power supply to the cash register is cut by a power failure or any other reason, simply wait for power to be restored.The details of any ongoing transaction as well as all sales data in memory are protected by the memory backup batteries.

· Power failure during a registration
The subtotal for items registered up to the power failure is retained in memory.You will be able to continue with the registration when power is restored.

· Power failure during printing a read/reset report
The data already printed before fhe power failure is retained in memory.You will be able to issue a report when power is restorted.

· Power failure during printing of a receipt and the journal Printing will resume after power is restored.A line that was being printed when the power failure occurred is printed in full.

· Other
The power failure symbol is printed and any item that was being printed when the power failure occurred is reprinted in full.

5-3. When the L sign appears on the display

About the low battery indicator...

The following shows the low battery indicator.

If this indicator appears when you switch the cash register on, it can mean one of three things:

· No memory backup batteries are loaded in the cash register.

· The power of the batteries loaded in the unit is below a ceratain level.

· The batteries loaded in the unit are dead.

To clear this sign, press AC key.

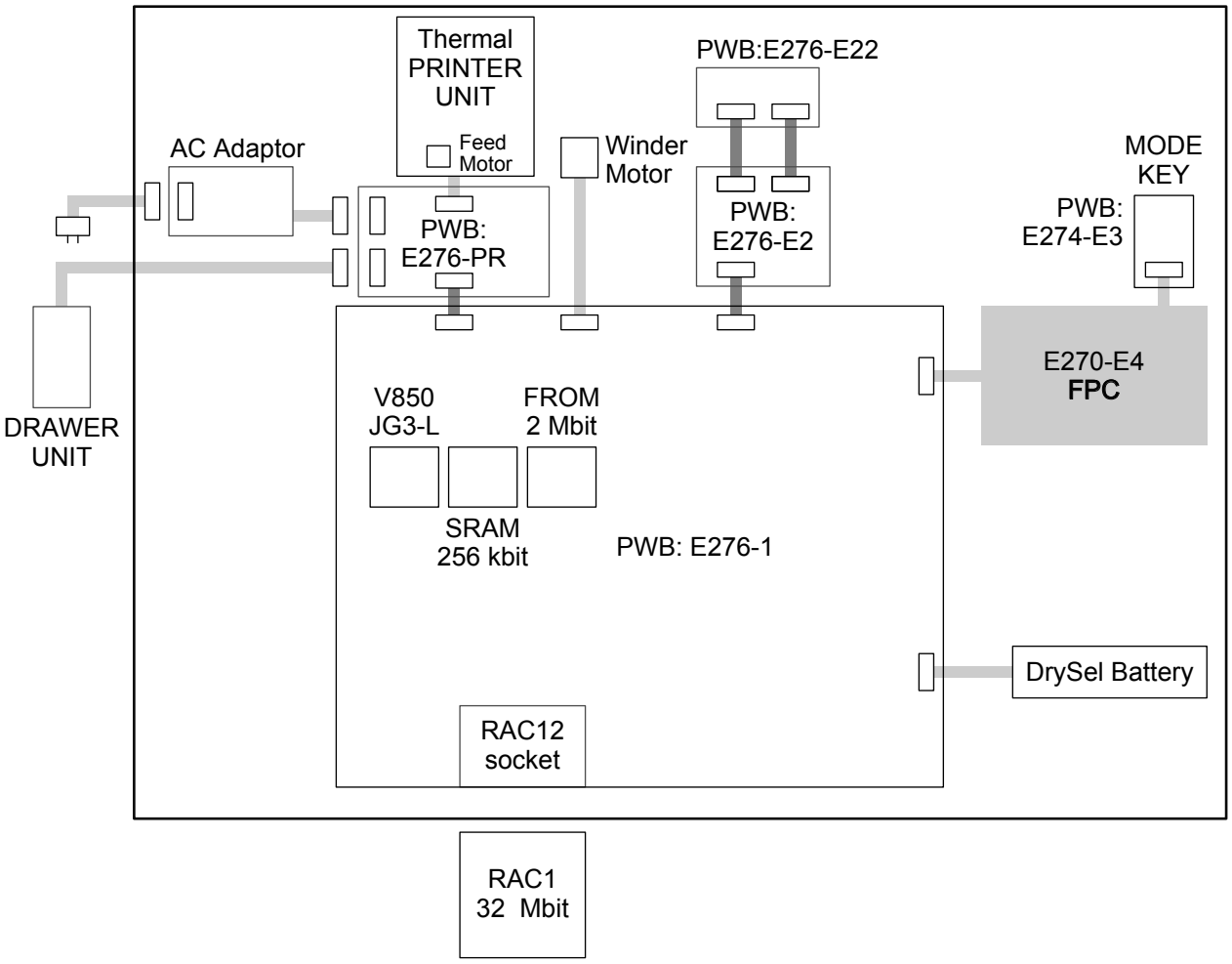
Important!

Whenever the low battery indicator appears on the display, load a set of 2 new batteries as soon as possible. If there is a power failure or you unplug the cash register when this indicator appears, you will lose all of your sales data and settings.

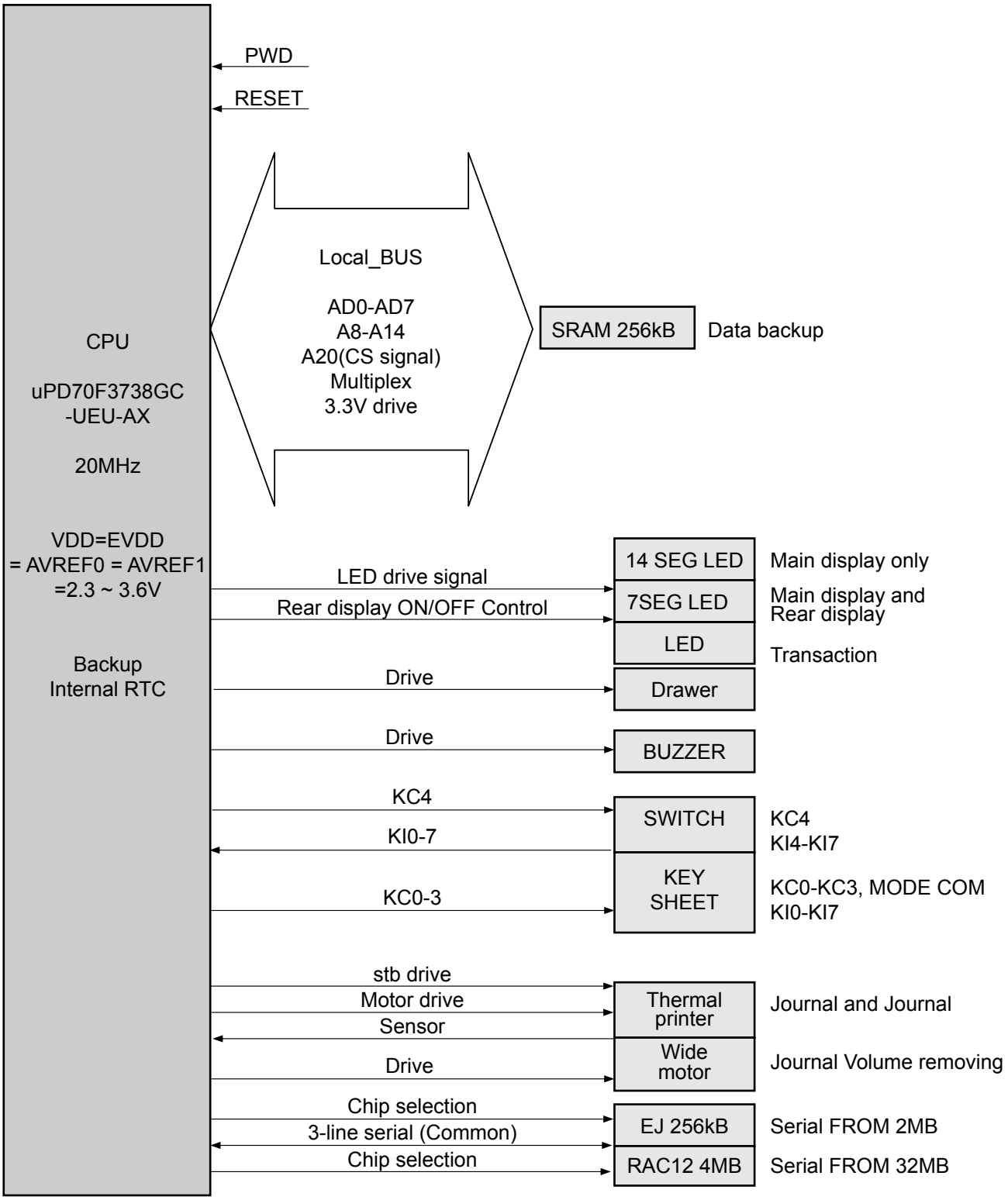
BE SURE TO KEEP THE POWER CORD OF THE CASH REGISTER PLUGGED IN WHENEVER YOU REPLACE THE BATTERIES.

6. CIRCUIT EXPLANATION

6-1. BLOCK DIAGRAM

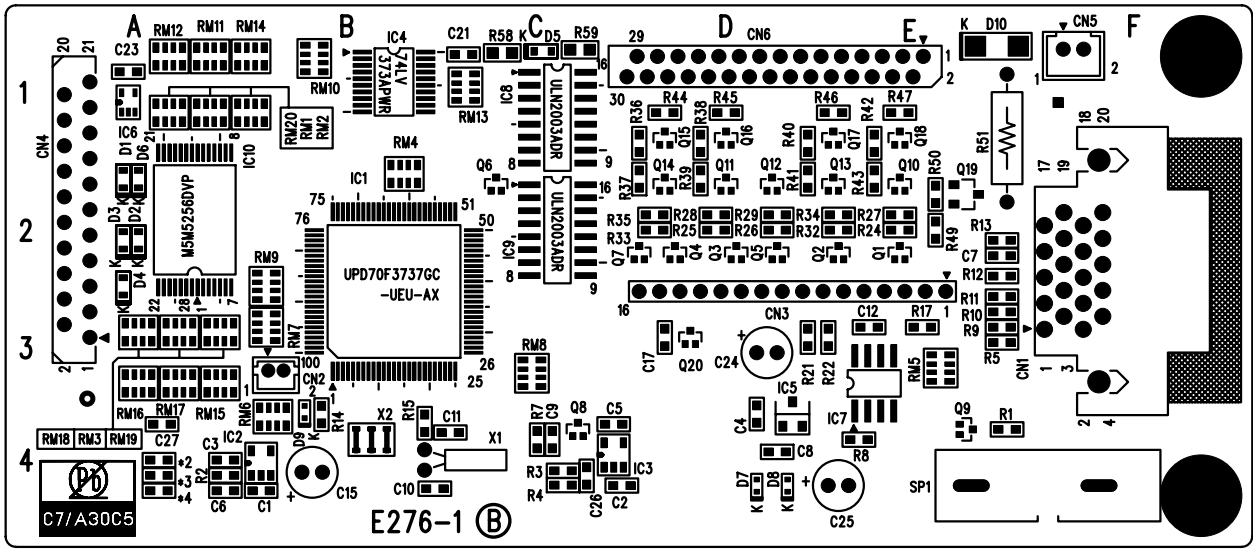


6-2. LSI DIAGRAM

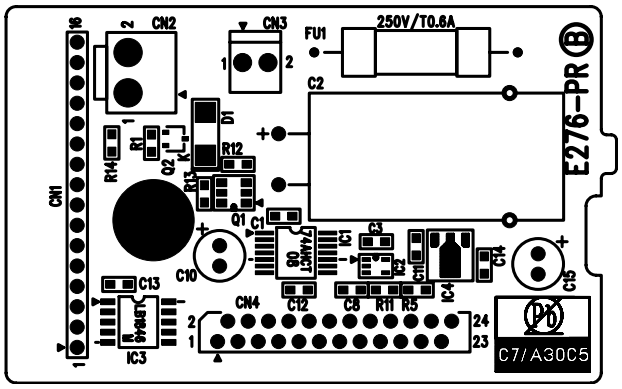


7. PCB LAYOUT

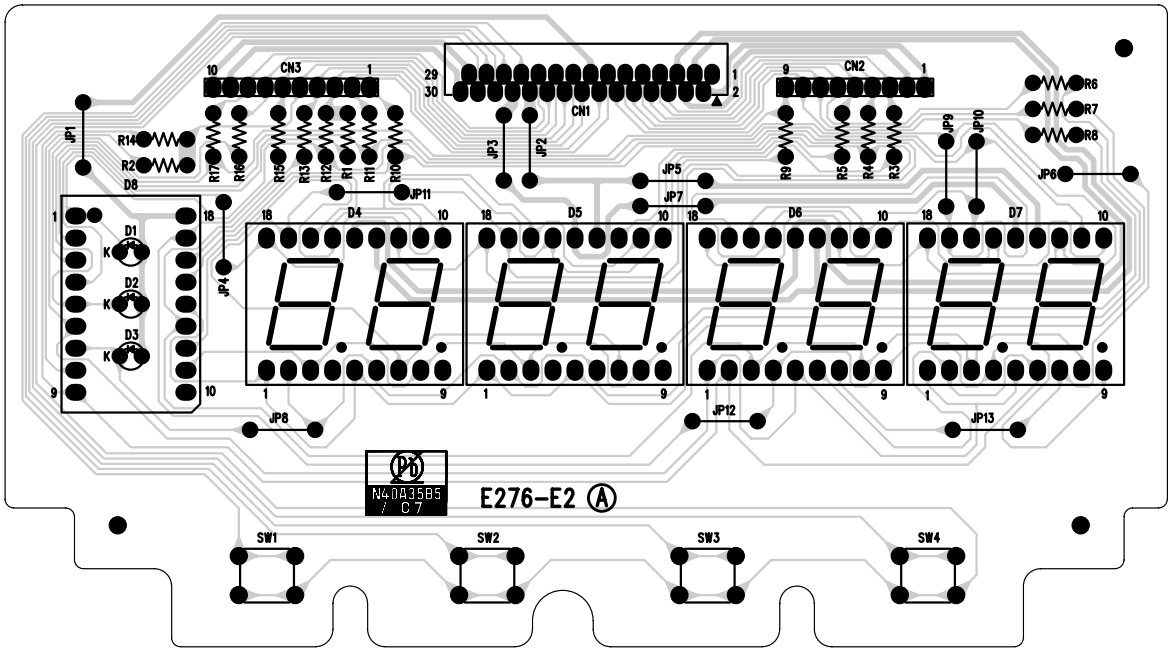
E276-1 PCB



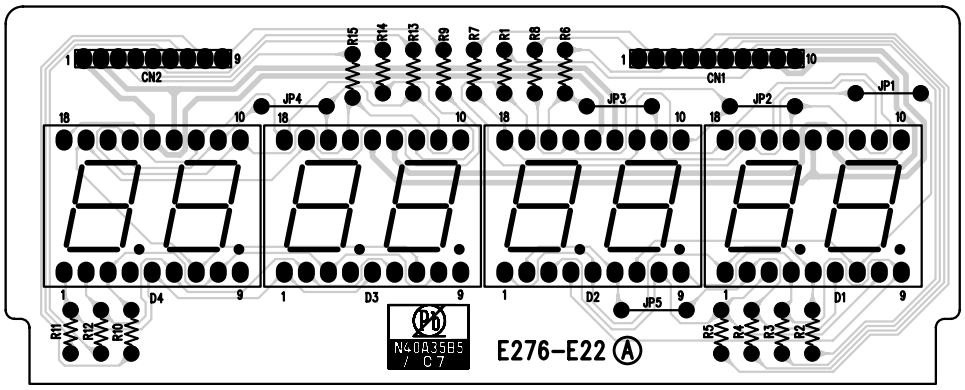
E276-PR PCB



E276-E2 PCB (Main display)



E276-E22 PCB (Rear display)



8. CIRCUIT DIAGRAMS

MODEL : SE-S10/PCR-T280/PCR-T280L/PCR-T290L

(EX-276)

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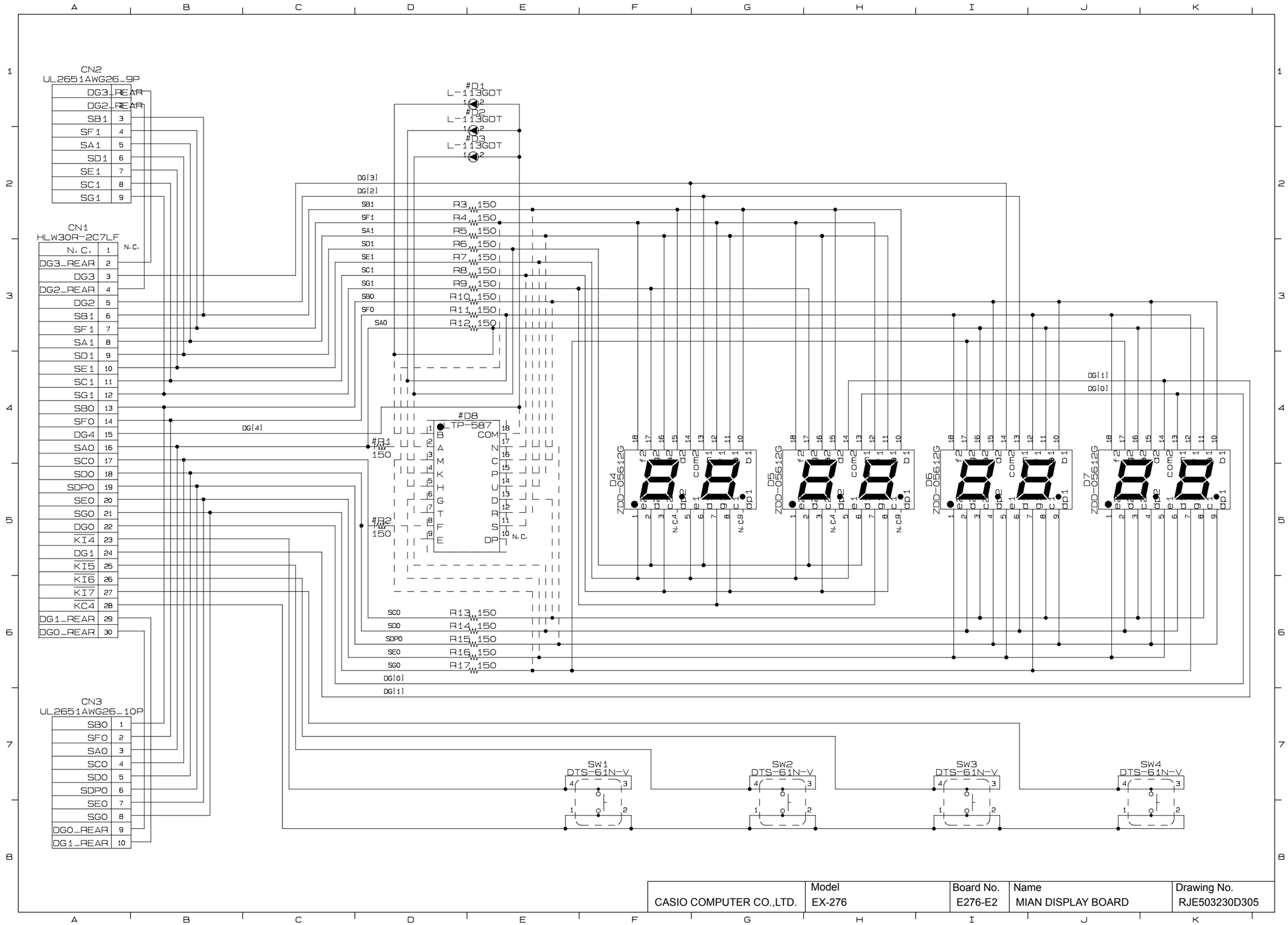
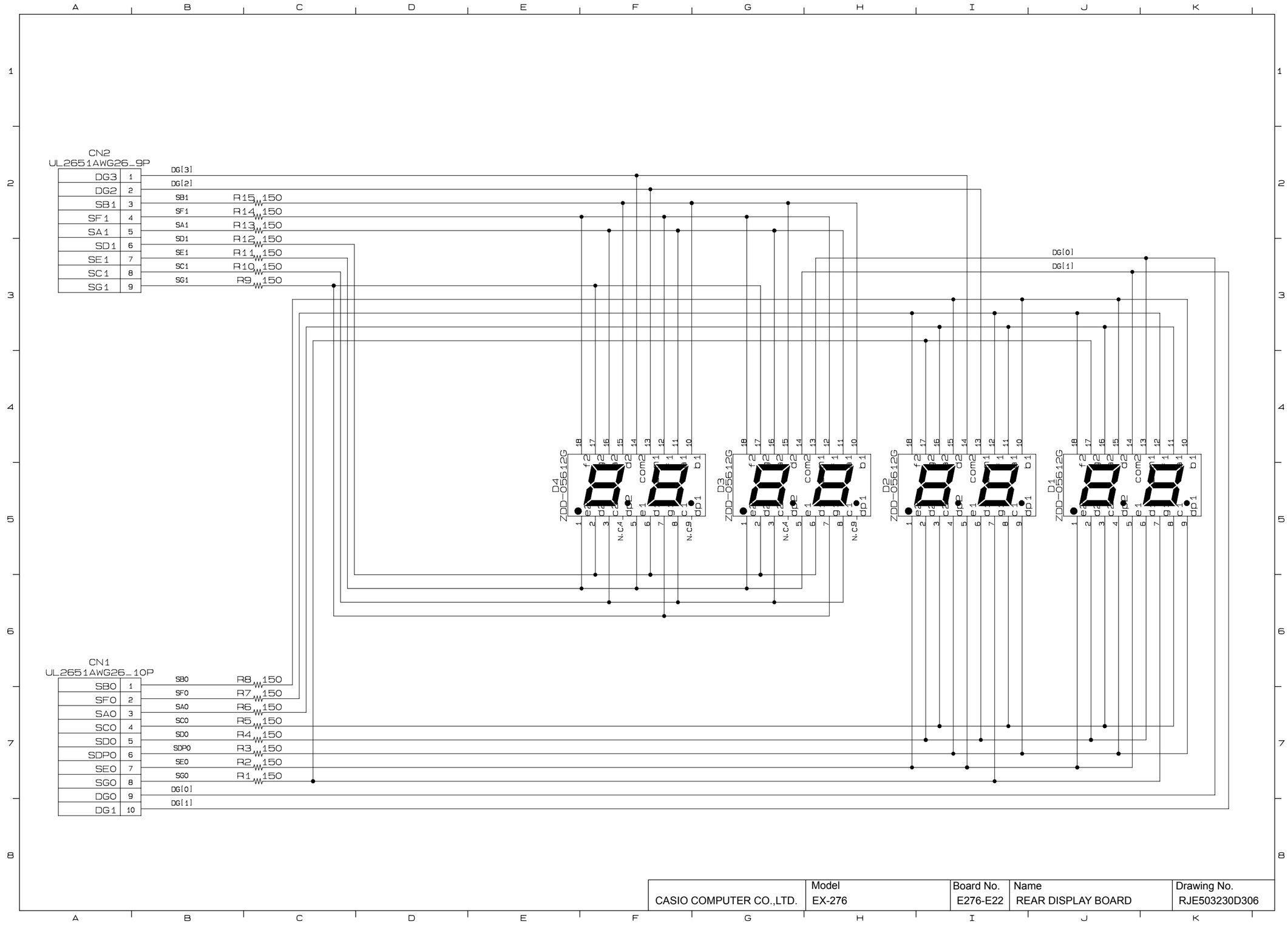
3. REAR DISPLAY CIRCUIT 38

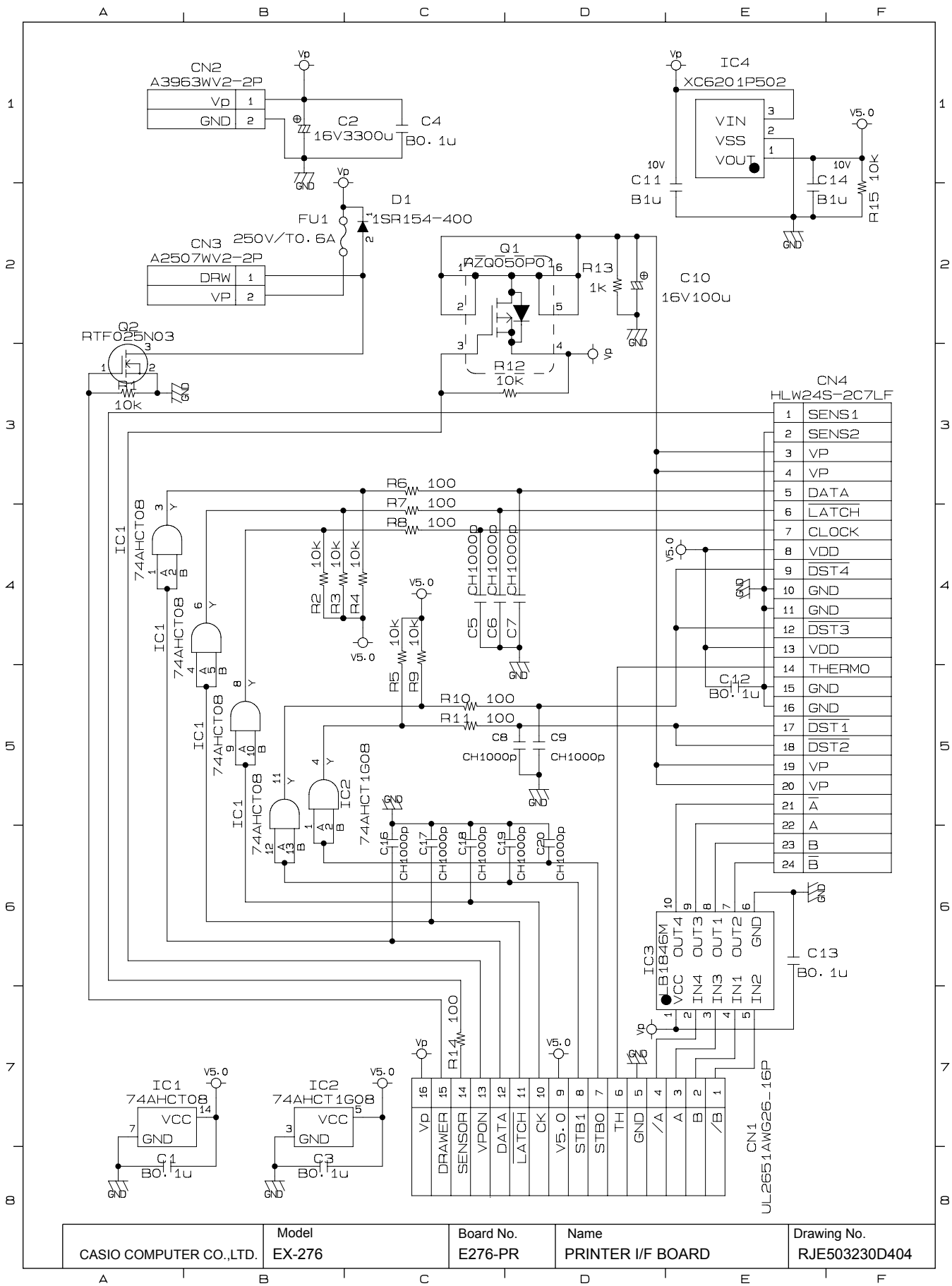
4. PRINTER I/F CIRCUIT 39

CASIO COMPUTER CO.,LTD.	Model EX-276	Board No. E276-1	Name MIAN BOARD	Drawing No. RJE503230D303



CASIO COMPUTER CO.,LTD.	Model	Board No.	Name	Drawing No.
	EX-276	E276-E2	MIAN DISPLAY BOARD	RJE503230D305


CN2
UL2651AWG26_9P
DG3 1
DG2 2
SB1 3
SF1 4
SA1 5
SD1 6
SE1 7
SC1 8
SG1 9
DG[3]
DG[2]
SB1 R15 150
SF1 R14 150
SA1 R13 150
SD1 R12 150
SE1 R11 150
SC1 R10 150
SG1 R9 150
DG[0]
DG[1]
D4 ZDD-05612G
D3 ZDD-05612G
D2 ZDD-05612G
D1 ZDD-05612G
CN1
UL2651AWG26_10P
SB0 1
SF0 2
SA0 3
SC0 4
SD0 5
SDP0 6
SE0 7
SG0 8
DG0 9
DG1 10
SB0 R8 150
SF0 R7 150
SA0 R6 150
SC0 R5 150
SD0 R4 150
SDP0 R3 150
SE0 R2 150
SG0 R1 150
DG[0]
DG[1]
CASIO COMPUTER CO.,LTD.
Model
EX-276
Board No.
E276-E22
Name
REAR DISPLAY BOARD
Drawing No.
RJE503230D306



CASIO COMPUTER CO.,LTD.	Model	Board No.	Name	Drawing No.
	EX-276	E276-PR	PRINTER I/F BOARD	RJE503230D404

9. PARTS LIST

MODEL : SE-S10/PCR-T280/PCR-T280L/PCR-T290L

(EX-276)

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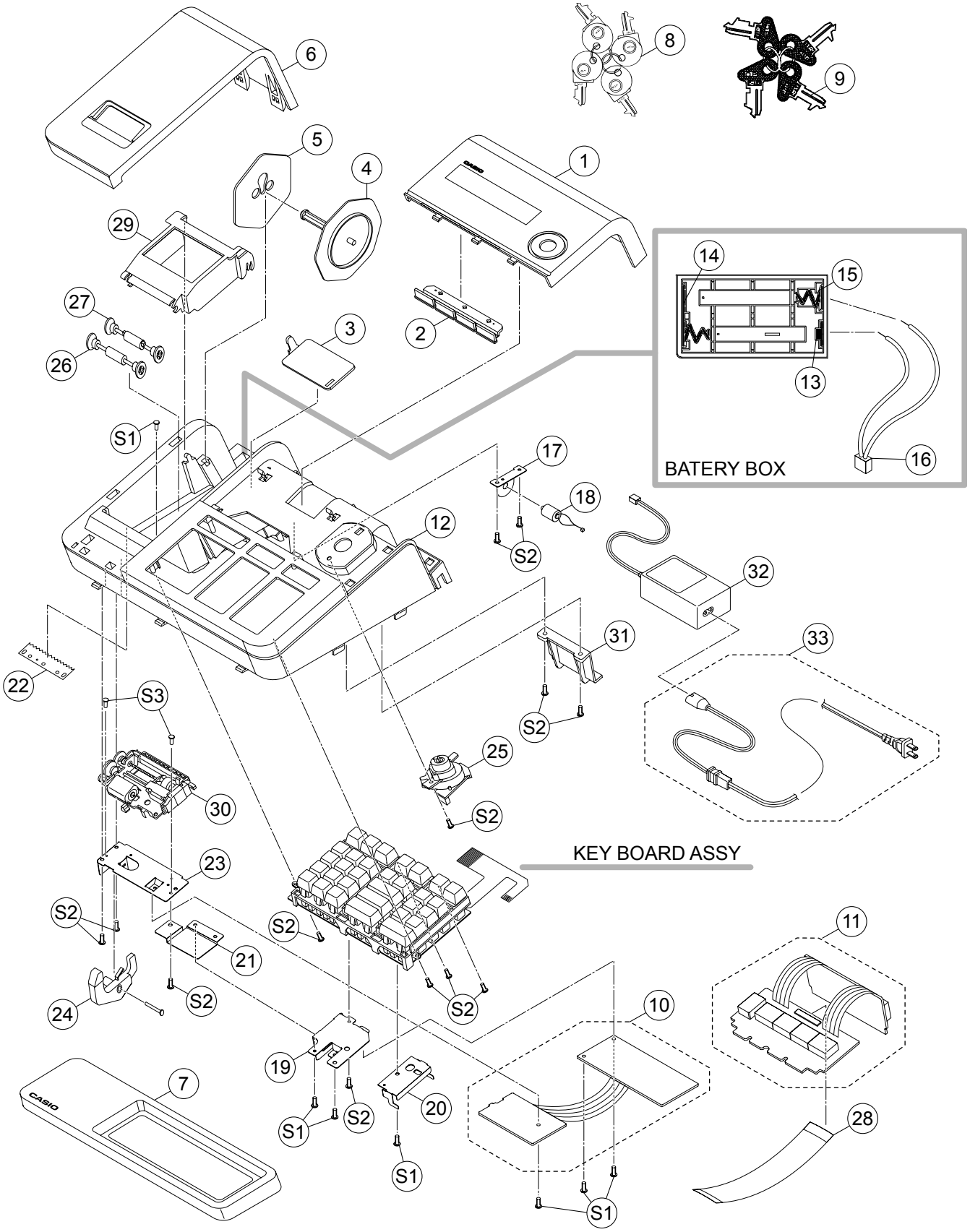
4. DRAWER M TYPE (DL-2811/2812) 47

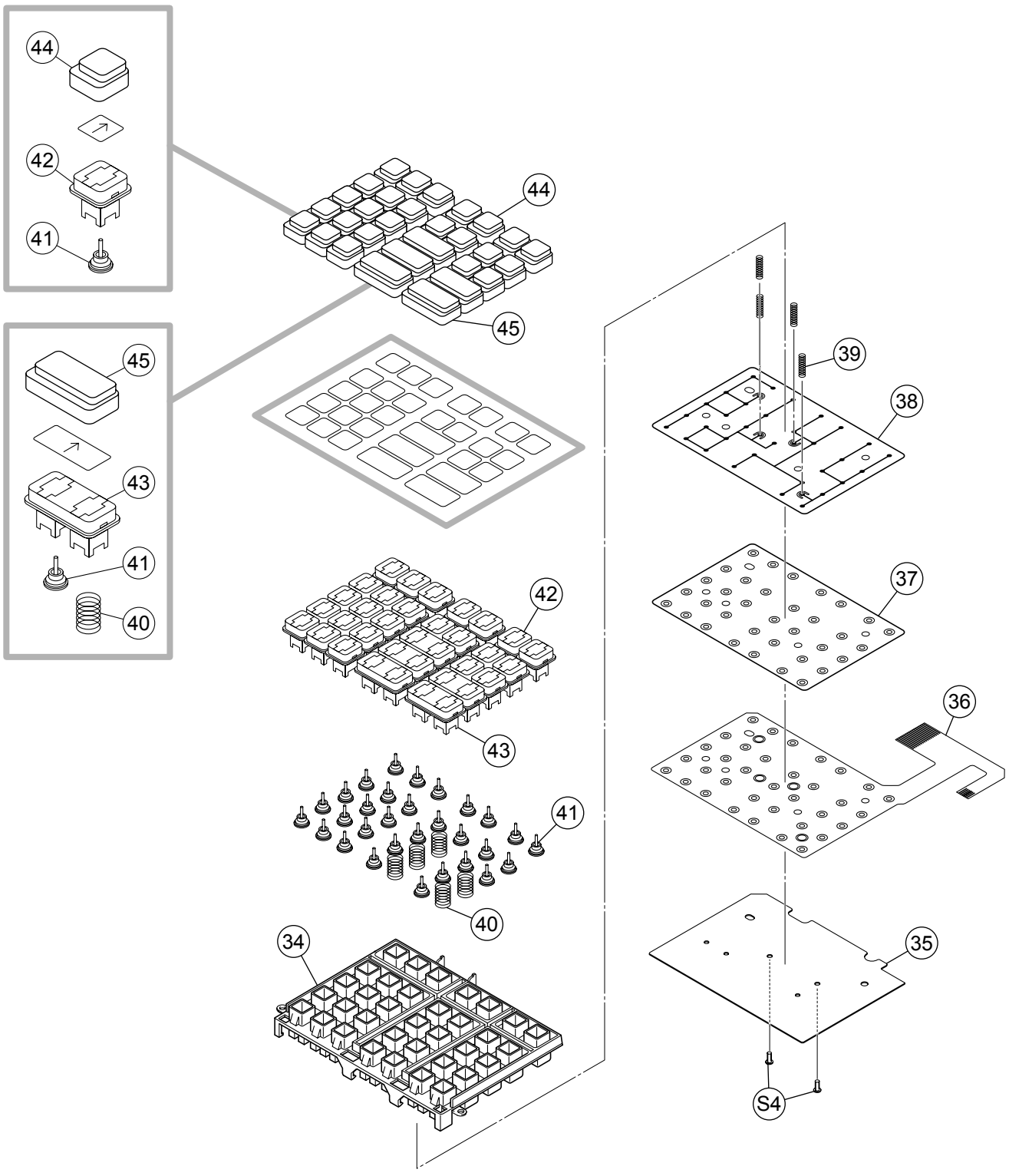
NOTES :

1. Price and specifications are subject to change withput prior notice.
2. As for spare parts order and supply, refer to the “GUIDEBOOK for Spare Parts Supply”, published separately.
3. The numbers in item column corespond to the same numbers in drawing.
4. CASIO does not supply the spare parts without parts code.
5. Remarks

Q'ty : Quantity used per unit
RANK: A = Essential
B = Stock recommended
C = Less recommended
X = No stock recommended

EXPLODED VIEW




44
42
41
45
43
41
40
44
45
42
43
41
40
34
39
38
37
36
35
S4

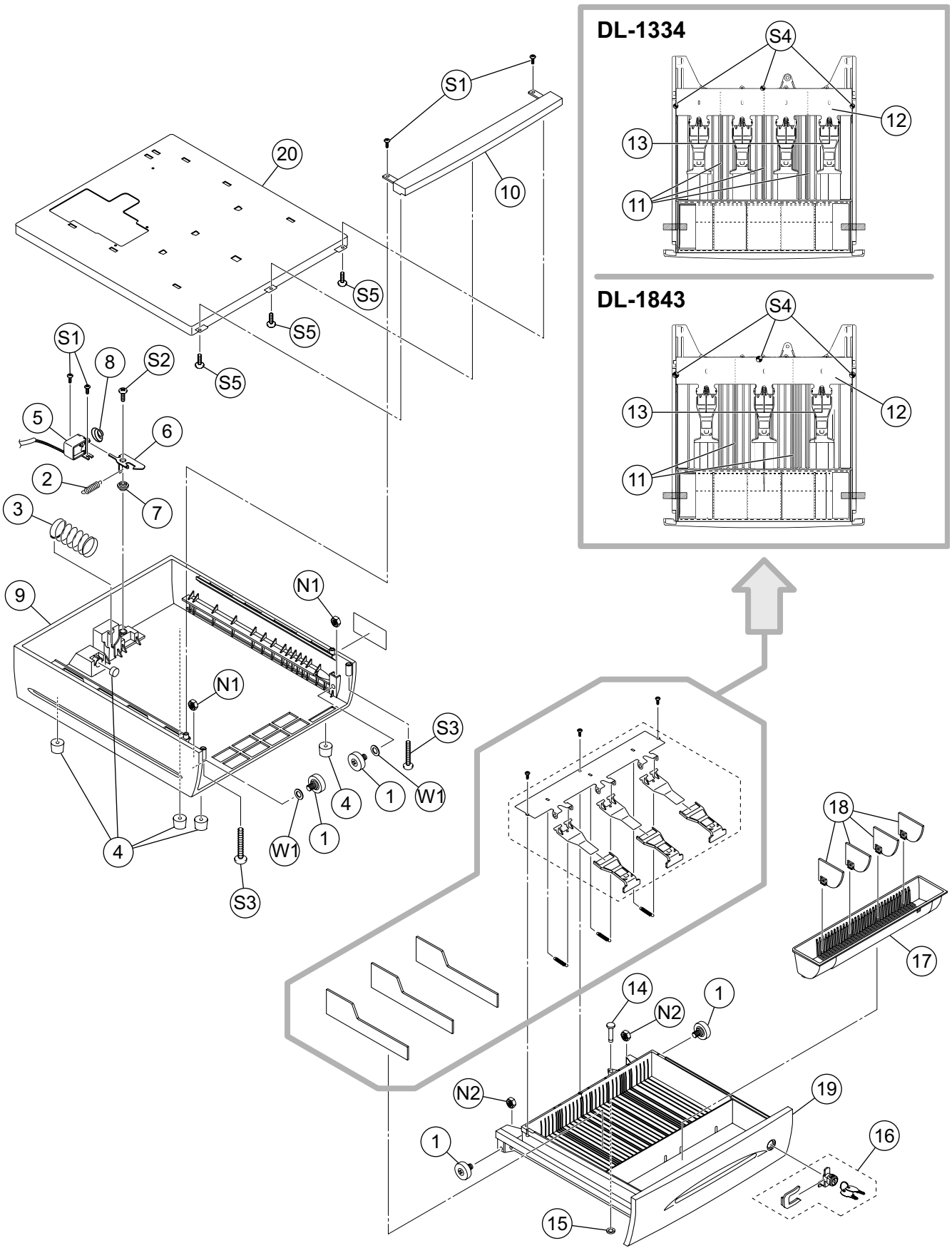
1 SE-S10MB
2 SE-S10MBUA
3 SE-S10MBUG
4 SE-S10MBUK
5 SE-S10MD
6 SE-S10SB
7 SE-S10SBUA
8 SE-S10SBUG
9 SE-S10SBUK
10 SE-S10T
11 PCR-T280
12 PCR-T280L
13 PCR-T290L

N	Item	Part No.	Part Name	Specification	Quantity													Price Code	R
					1	2	3	4	5	6	7	8	9	10	11	12	13		
	1. FINAL ASSY																		
N	**1**	10345779	BOARD/DISPLAY	RJE502996-005V03											1	1			C
N	**1**	10345780	BOARD/DISPLAY	RJE502996-006V03	1	1	1	1	1	1	1	1	1	1					C
N	**1**	10345782	BOARD/DISPLAY	RJE502996-007V03													1		C
N	**2**	10347379	ARRAY/KEY	RJE503262-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	3	10326707	COVER/BATTERY	RJE500211-001V03	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	4	10349665	PULLY/WIND	RJE501880-001V04	1	1	1	1	1	1	1	1	1	1	1	1	1		A
	5	10285007	SPOOL/PAPER	RJE502545-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		A
N	**6**	10347360	COVER/PRINTER	RJE502997-003V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	7	10325056	SUB ASSY/TRAY	RJE503008-001V01						1	1	1	1	1	1				C
	8	10254924	SUBASSY/KEY SET	RJE500074*002V03	1	1	1	1	1	1	1	1	1	1					C
N	**9**	10325043	SUBASSY/KEY SET	RJE503007*002V01											1	1	1		C
	S1		SCREW	S-BDST-3X8ZC	1	1	1	1	1	1	1	1	1	1	1	1	1		
	2. U-CASE ASSY																		
N	**10**	10347303	PCB ASSY/E276-1	RJE503222*001V01											1				A
N	**10**	10347342	PCB ASSY/E276-1	RJE503222*002V01												1	1		A
N	**10**	10347311	PCB ASSY/E276-1	RJE503222*004V01	1	1	1	1	1	1	1	1	1	1					A
N	**11**	10347316	PCB ASSY/E276-E2	RJE503224*002V01	1	1	1	1	1	1	1	1	1	1	1	1	1		A
N	**12**	10347351	CASE/UPPER	RJE503254-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	13	63224499	SPRING/BATTERY	A42606-1	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	14	10294939	SPRING/BATTERY	RJE502620-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	15	10294940	SPRING/BATTERY	RJE502622-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**16**	10350060	SUB ASSY/BAT-CABLE	RJE503227*001V02	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**17**	10347321	MOUNT/MOTOR	RJE503259-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**18**	10240554	ASSY/MOTOR	E441295*003V01	1	1	1	1	1	1	1	1	1	1	1	1	1		A
N	**19**	10347330	MOUNT/PCB	RJE503260-002V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**20**	10347323	SUPPORT/PCB	RJE503267-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	21	10349673	PLATE/FG	RJE503298-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	22	10236317	CUTTER/PAPER	E441364-001V02	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**23**	10347345	MOUNT/PRINTER	RJE503266-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**24**	10347346	ARM/EJECT	RJE503261-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	25	10327860	SW ASSY/MODE-KEY	E341249*004V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	26	10142488	ROLLER/P	RJE500850-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		B
	27	10142489	ROLLER/P/D	RJE500851-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		B
N	**28**	10240926	FFC	E441341-010V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**29**	10347352	ARM/PLATEN	RJE503264-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	30	10226189	PRINTER	LTPZ225B-C192-E	1	1	1	1	1	1	1	1	1	1	1	1	1		A
N	**31**	10347329	HOLDER/POWER	RJE503288-001V01	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**32**	10347349	UNIT/POWER	SO1258A	1	1	1	1	1	1	1	1	1	1	1	1	1		C
N	**33**		CORD/POWER	E (*B)	1		1			1		1							C
N	**33**		CORD/POWER	U (*C, L)											1	1	1		C
N	**33**	10240096	CORD/POWER	AR1CSEX270-UKLF				1	1				1						C
N	**33**	10240097	CORD/POWER	AR1CSEX270-SAA-ALF		1					1								C
N	**33**		CORD/POWER	U (*P)										1					C
	S1		SCREW	S-BDST-3X8ZC	7	7	7	7	7	7	7	7	7	7	7	7	7		
	S2		SCREW	S-BDPT-3X8Z3	13	13	13	13	13	13	13	13	13	13	13	13	13		
	S3		SCREW	S-PAMA-2.5X4Z3	13	13	13	13	13	13	13	13	13	13	13	13	13		

1 SE-S10MB
2 SE-S10MBUA
3 SE-S10MBUG
4 SE-S10MBUK
5 SE-S10MD
6 SE-S10SB
7 SE-S10SBUA
8 SE-S10SBUG
9 SE-S10SBUK
10 SE-S10T
11 PCR-T280
12 PCR-T280L
13 PCR-T290L

N	Item	Part No.	Part Name	Specification	Quantity													Price Code	R
					1	2	3	4	5	6	7	8	9	10	11	12	13		
	3. KEY BOARD ASSY																		
N	**34**	10335958	FRAME/KEY BOARD	RJE502981-001V02	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	35	10335946	CHASSIS/KEY BOARD	RJE500682-002V03	1	1	1	1	1	1	1	1	1	1	1	1	1		X
	36	10335946	FPC	RJE501097-001V02	1	1	1	1	1	1	1	1	1	1	1	1	1		B
	37	10335657	SPACER	RJE501103-001V03	1	1	1	1	1	1	1	1	1	1	1	1	1		C
	38	10335956	SHEET/COMMON	RJE501100-001V02	1	1	1	1	1	1	1	1	1	1	1	1	1		B
	39	10193646	SPRING/PRESS/B-E272	E441298-002V03	4	4	4	4	4	4	4	4	4	4	4	4	4		C
	40	10193645	SPRING/PRESS/A-E272	E441298-001V03	5	5	5	5	5	5	5	5	5	5	5	5	5		C
	41	10167457	RUBBER/CONTACT	RJE501209-002V01	30	30	30	30	30	30	30	30	30	30	30	30	30		B
	42	10324975	KEY TOP /S	RJE502974-001V01	25	25	25	25	25	25	25	25	25	25	25	25	25		A
	43	10324988	KEY TOP /L	RJE502979-001V01	5	5	5	5	5	5	5	5	5	5	5	5	5		A
	44	10324989	CAPS/S	RJE502975-001V01	25	25	25	25	25	25	25	25	25	25	25	25	25		A
	45	10324990	CAPS/L	RJE502980-001V01	5	5	5	5	5	5	5	5	5	5	5	5	5		A
	S4		SCREW	S-WLPT-3X8ZC	2	2	2	2	2	2	2	2	2	2	2	2	2		

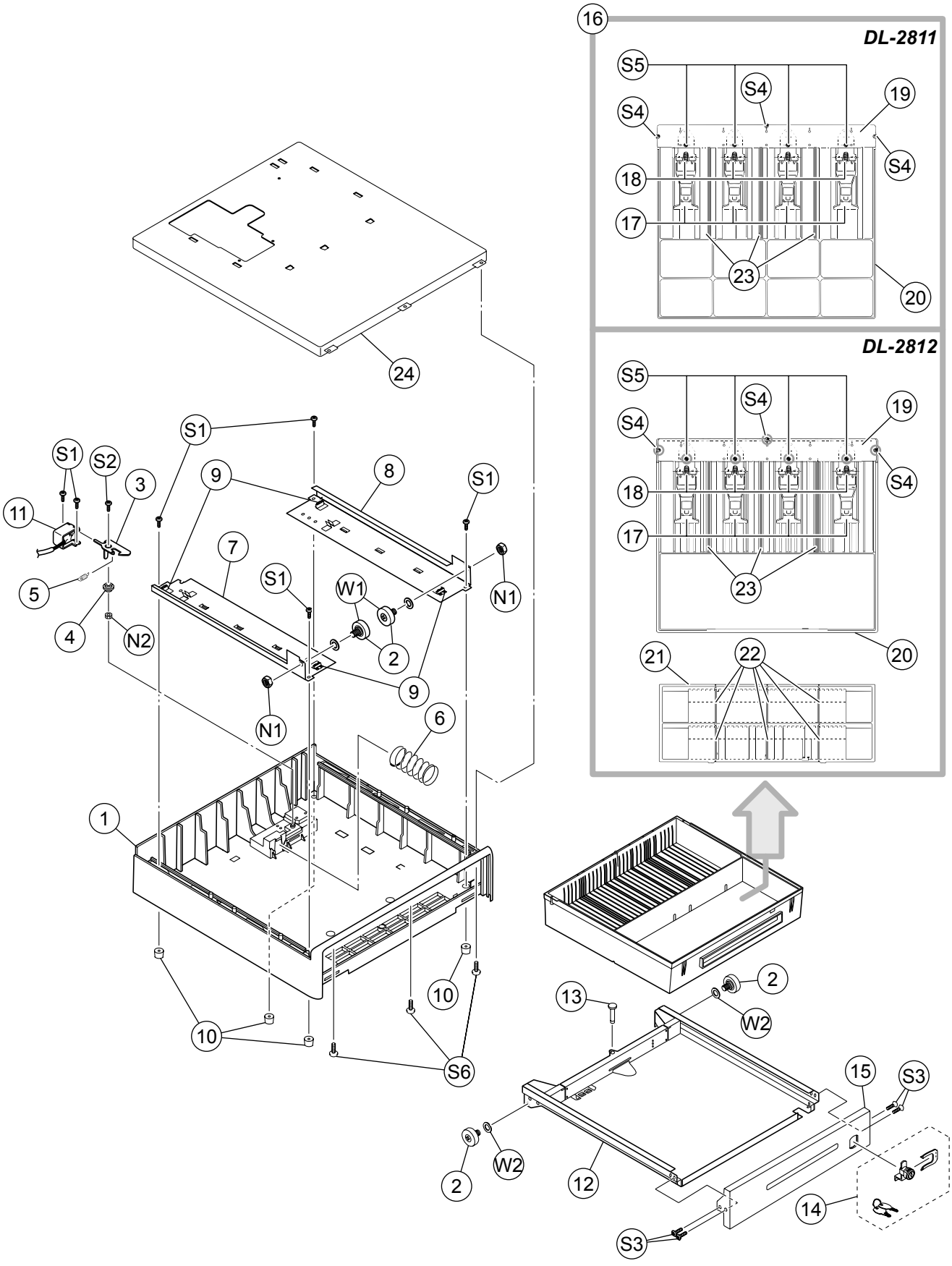
DRAWER S type (DL-1334 / DL-1843)



1 DL-1334
2 DL-1843

N	Item	Part No.	Part Name	Descriptions	QUANTITY		Price Code	R
					1	2		
	1	55000878	ROLLER/DELRIN	DR-19B2	4	4	AF	B
	2	10201068	LOCK/SPRING	RJE500007-001V02	1	1	AF	C
	3	10194207	SPRING/PRESS	E412137-001V02	1	1	AA	C
	4	10167366	RUBBER/PAD	RJE501204-001V01	5	5	AD	C
	5	10080189	SUB ASSY/SOLENOID	E341255*2	1	1	AV	B
	6	10259120	LEVER/HOOK	RJE502182*001V01	1	1		C
	7	10260417	AXIS/LEVER HOOK	RJE502184-001V01	1	1	AA	C
	8	10267909	SPRING/PLUNGER	RJE502245-001V01	1	1	AA	C
	9	10317352	CASE/MAIN	RJE500670-003V05	1	1	BY	B
	10	10324884	PLATE/FRONT	RJE502970-001V01	1	1	BI	B
	11	10298553	PLATE/PARTITION	RJE500214-002V03	3	2	AB	C
	12	10231349	SUB ASSY/BILL HOLDER	RJE501337*002V03		1	AR	X
	12	10231347	SUB ASSY/BILL HOLDER	RJE501337*001V03	1		AQ	X
	13	10276626	SPRING/BILL HOLDER	E441357-001V03	4	3	AA	A
	14	10238184	RIVETS/COLD HEADED	T-CRTP-5X26Z3	1	1	AA	X
	15	55801452	CS FIX	CSTW-5	1	1	AA	X
	16	10120527	SUB ASSY/CAM LOCK	CL-16C	1	1	BA	C
	17	10298558	CASE/COIN	RJE500212-002V04	1	1	AO	C
	18	10298552	SEPARATER/COIN	RJE500213-002V03	4	4	AA	C
	19	10317357	CASE/BILL COIN	RJE500671-005V04	1	1	BL	X
	20	10324882	COVER/TOP	RJE502986-001V01	1	1	BP	X
	W1	10080122	WASHER	11.5X6.5XT0.8	2	2		
	N1		NUT	6 ZMC-3	2	2		
	N2		NUT	N-HXT2-6Z3	2	2		
	S1		SCREW	3X8 ZMC-3,,	4	4		
	S2		SCREW	S-WBPT-4X25Z3	1	1		
	S3		SCREW	S-PAPT-3X22Z3	2	2		
	S4		SCREW	S-PAB0-3X8Z3	3	3		
	S5		SCREW	S-BDPT-3X6Z3	3	3		

DRAWER M type (DL-2811 / DL-2812)



1 DL-2811
2 DL-2812

N	Item	Part No.	Part Name	Descriptions	QUANTITY		Price Code	R
					1	2		
	1	10324888	CASE/MAIN	RJE502983-001V01	1	1		B
	2	55000619	ROLLER/DELRIN	DR-19B1	4	4	AG	B
	3	10236805	LEVER/HOOK	E341286-001V03	1	1		C
	4	10127603	AXIS/LEVER HOOK	RJE500674-001V01	1	1	AA	C
	5	10201068	LOCK/SPRING	RJE500007-001V02	1	1	AF	C
	6	62465010	SPRING/PRESS	E412069-1	1	1	AA	X
	7	10078759	RAIL/MLED18	E240841-1	1	1		C
	8	10078760	RAIL/MRED18	E240842-1	1	1		C
	9	10194208	RUBBER/DUMPER	RJE500005-001V02	4	4	AD	X
	10	10167366	RUBBER/PAD	RJE501204-001V01	4	4	AD	C
	11	10080191	SOLENOIDO SUB ASSY	E341301*4	1	1	BC	B
	12	10203849	DRAWER SUB ASSY	E341274*001V03	1	1		C
	13	52000106	RIVET	5X30	1	1	AA	X
	14	10272580	LOCK/CYLINDER	RJE502350*001V01	1	1		C
	15	10324878	PANEL/FRONT	RJE502991-001V01	1	1		C
	16	10200516	BILL COIN CASE ASSY	RJE501368*004V01		1	BW	C
	16	10225530	BILL COIN CASE ASSY	RJE501368*006V01	1			C
	17	10230104	SUB ASSY/ BILL HOLDER	E341290*002V04	4	4	AC	A
	18	10276626	SPRING/BILL HOLDER	E441357-001V03	4	4	AA	A
	19	10194233	PLATE/BILL HOLDER	E240845-001V02	1	1	AK	X
	20	10298566	CASE/BILL	RJE500367-002V02	1			X
	20	10298565	CASE/BILL	E140505-002V03		1	BK	X
	21	10298559	CASE/COIN	RJE500217-002V02		1	AY	C
	22	10298554	SEPARATER/COIN	RJE500216-002V02		6	AA	B
	23	10298555	SEPARATER/BILL	RJE500219-002V02	3	3	AB	B
	24	10324887	COVER/TOP	RJE502987-001V01	1	1		X
	N1		6-NUT	N-HXT1-6Z3	2	2		
	N2		6-NUT	N-HXT1-4Z3	1	1		
	W1		WASHER	W-6X13-1.0Z3	2	2		
	W2		WASHER	6X13X1.0 ZMC-3	2	2		
	S1		SCREW	S-WSPT-4X10Z3	6	6		
	S2		SCREW	S-PADLMA-4X25Z3	1	1		
	S3		SCREW	3X10 NI	4	4		
	S4		SCREW	3X8 ZMC-3,,		3		
	S5		SCREW	3X5 NI...		4		
	S6		SCREW	S-BDPT-3X8Z3	3	3		

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